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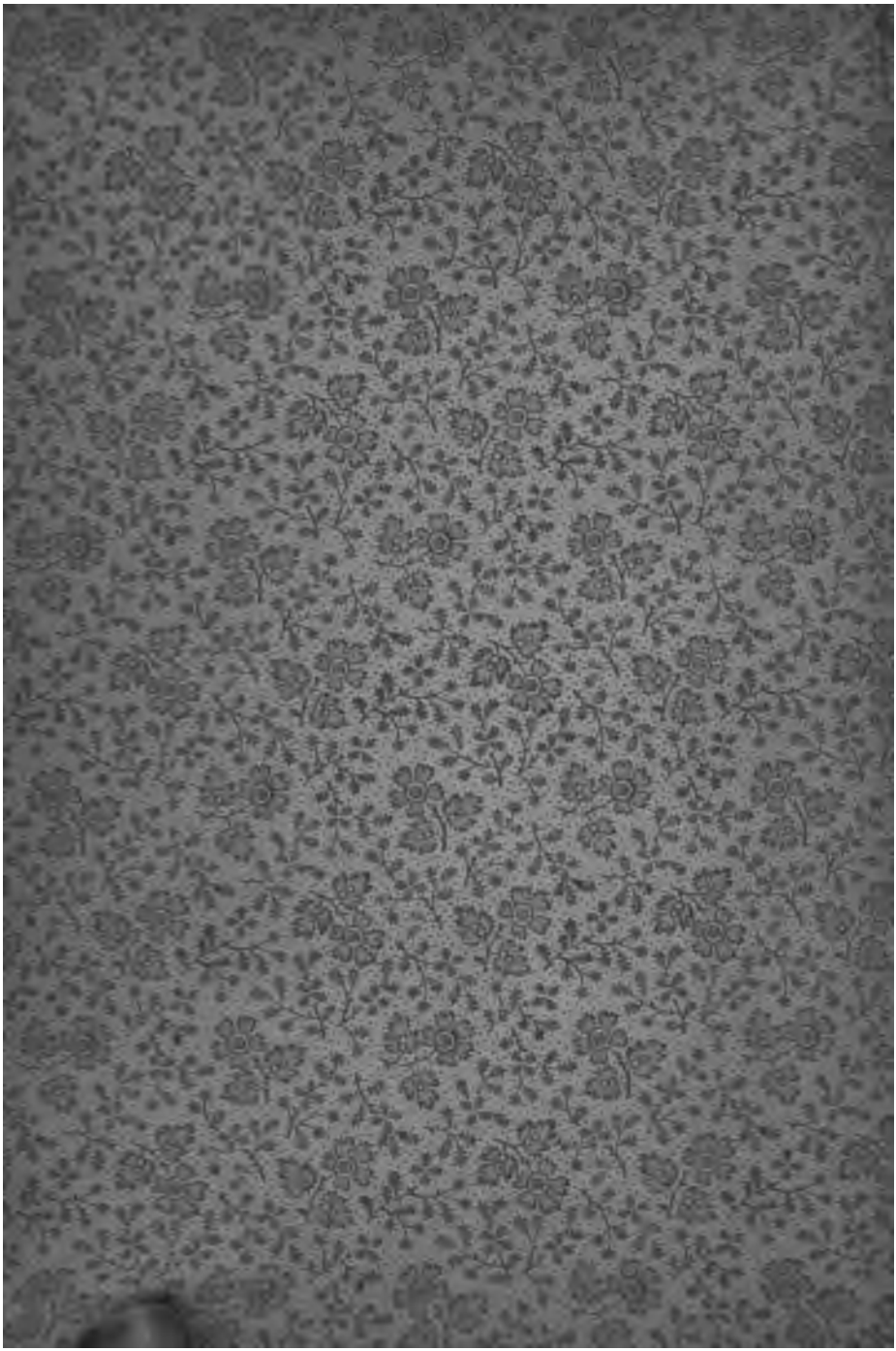
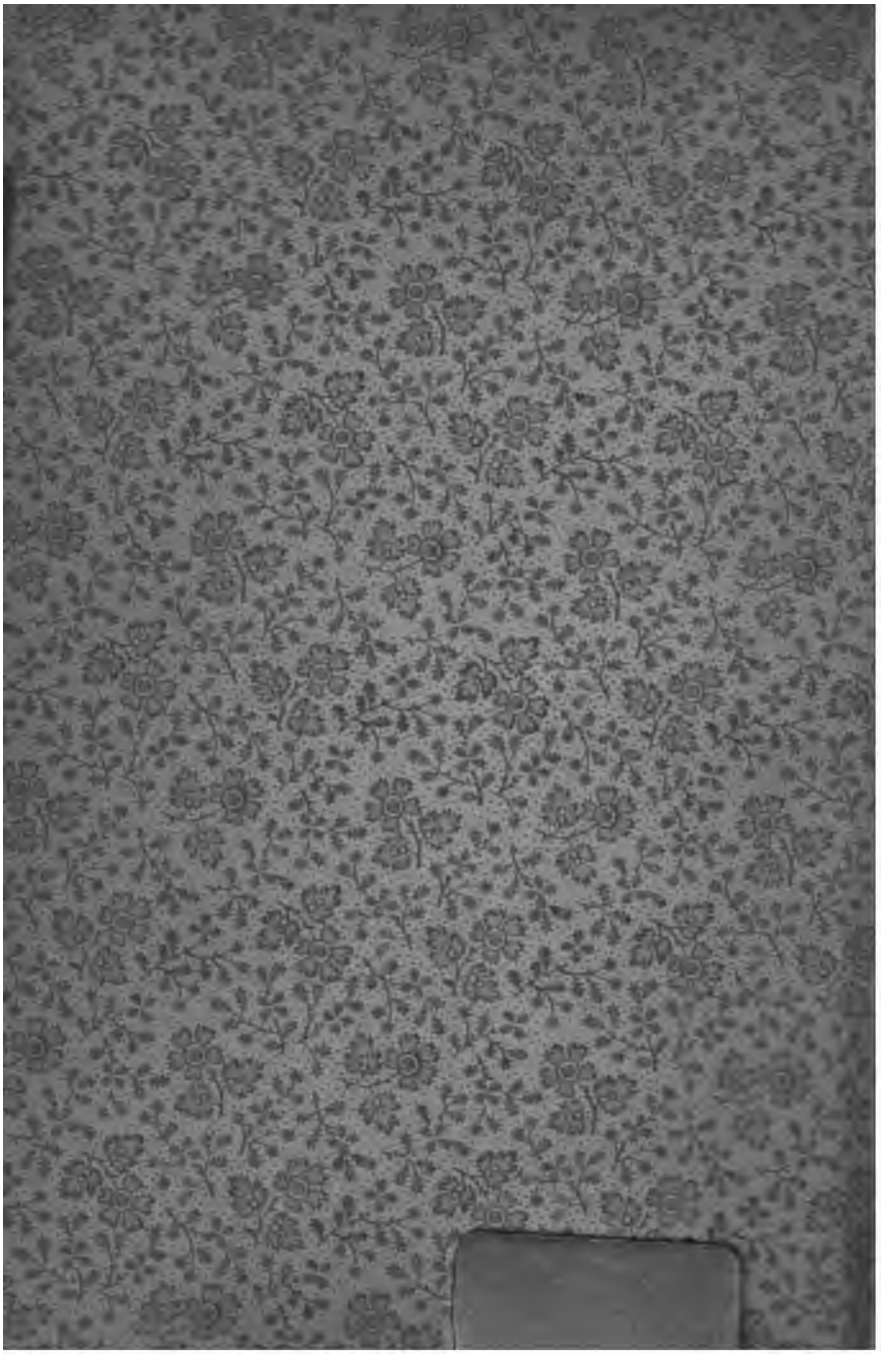
Beginnings of Faith and Science

S. H. Wood, D. D., LL. D.





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of
Faith and Science

By
E. M. Wood, D. D., LL. D.

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CHRISTIAN SCIENCE, NOT A CHRISTIAN CHURCH.

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INTRODUCTION

ONE of the most pleasant reminiscences of my life is that wherever I have lived and labored I have had the confidence and good will of the young people of the church and community. And this has not come to me as a precious heritage by reason of making too great concessions, but by taking a deep interest in their future. Six years of my public life have been ardently devoted to collegiate work, and I have had before me hundreds of young men and women, and I have looked into their bright faces with the profoundest hopes for their future. And this interest in them does not lessen with the lengthening years. And knowing that there are thousands of them full of native ability and ambition who can never spend time in college halls, and yet by making diligent use of the helps prepared for their hands may rise to fair prominence and great usefulness.

It is mainly these students, in and out of school, I have had specially in mind while preparing these pages. Their student life should begin by securing at least a few grains of truth from him who is the Radium Light of the world. All moral and scientific torches should come to this light for illumination. I regard any person's life as dangerously problematical who will purposely leave out of his life plan a sincere acceptance of Jesus Christ as his moral teacher and Saviour.

In this work you will observe that I have placed first the intellectual and literary substratum of Christianity not ignoring, however, for a moment its pure spiritual nature, which throbs in every fibre of its intellectual warp. Then it may be seen that basic Christianity like natural science is founded upon facts, and if these facts do not overlay each other they are at least in closest juxtaposition. And thus Christianity and science are like an organ with a double bank of keys, and he is the most skillful player and brings out the sweetest music who manipulates both banks at his pleasure. A scientific Christian are terms which blend as readily as the colors white and cream, or green and blue.

I desire the reader to keep in mind that the following pages are intended to be beginnings. They are not the goal of Christian and intellectual manhood, but trust that they may have an impulsive power which may tend to carry you forward to that happy condition called the perfect man in Christ Jesus.

THE AUTHOR

CONTENTS

CHAPTER I.—The Intellectual Plateau of Christianity.

CHAPTER II.—What About the Old Testament?

CHAPTER III.—What About the New Testament?

CHAPTER IV.—Cosmogony, Science and Revelation.

CHAPTER V.—Astrology and Astronomy.

CHAPTER VI.—Geology and Earth Building.

CHAPTER VII.—Biology and Evolution.

CHAPTER VIII.—Psychology or the Soul's Powers.

CHAPTER IX.—Ethics or Moral Philosophy.

CHAPTER X.—Social Science or Political Economy.

CHAPTER XI.—Art and Music.

CHAPTER XII.—Church Music and Music Power.

CHAPTER XIII.—Musical Composition, Instruments and Composers.

CHAPTER XIV.—Teachers and Teaching.

CHAPTER XV.—The New Education.

CHAPTER XVI.—Mastering Circumstances.

CHAPTER I

THE INTELLECTUAL PLATEAU OF CHRISTIANITY

The spiritual nature of Christianity has been specially emphasized ever since the time of the Protestant Reformation. That at times too great stress has been laid upon its spiritual nature is as true as that at times too much stress has been placed upon its ceremonial and intellectual nature, and the evils resulting from each will perhaps about balance each other. It is important to remember that the spiritual and the formal are the natural opposites, but properly considered the spiritual and the intellectual are never antagonists.

The intellectual character of the Founder of Christianity has never received due consideration. Writers and speakers seem to hesitate to present this feature of his life lest they in some measure appear to detract from his divine nature and mission, but his divinity will never suffer from a proper presentation of his humanity. It is a kind of an Americanism to speak with considerable pride of the humble origin of some of our great men, and in this respect we often under value early personal biography and strain the facts and influences of individual history. As instances it is not certain that General Grant ever tanned a piece of leather, or that Abraham Lincoln ever split rails, and if they did so we speak of these things to humble their boyhood that we may exalt their manhood. And we confess that we do not see either the wisdom or righteousness of such a course. And very much so has it been concerning Christ. Persons speak with evident pleasure of him as "the carpenter's son," as

working with his father at the bench, until he was thirty years of age, and thus unwittingly, it may be, they join hands with the Pharisees who said this to cast opprobrium upon him. And yet we do not know certainly that he ever shoved a plane, or worked a saw, or drove a nail. We must not forget that Christ was of the priestly order and he must, therefore, fit himself for that office. You will remember that after having entered upon his public life-work his opponents were surprised at his intelligence, and asked, "Whence hath this man this wisdom"? or as another writer records it, "Whence hath this man letters, not having learned?" Although they did not know his history fully, yet Christ from a child "advanced in wisdom and stature," so that when only twelve years of age, when in the temple at Jerusalem, the great teachers there were "amazed at his understanding and his answers." It would at least be interesting to know at what exact point in his young life the thought first came to him as to what was his special mission in the world. So early at least as at twelve years of age he had this clear conception and he was surprised that his parents had not yet realized it when with a concealed reproof for their ignorance he said, "Wist ye not that I must be in my Father's house"? or "in the things of my Father?" Undoubtedly Christ had to study and learn, as any other boy has to do that he might become intelligent. Many things came to him, no doubt, by virtue of his divinity, and also as direct revelations from the Father, but his accurate knowledge of the Jewish scriptures as shown especially in controversy with the theological teachers of his day; his correct knowledge of nature as shown in his parables; his unerring information in history and biography had to be obtained, no doubt, in the ordinary way. It is not known that there were any schools of any kind at this time in Nazareth where his parents resided, and it seems reasonable to suppose that soon after his twelfth year he returned to Jerusalem and entered upon his studies and perhaps he and Paul may have been school-mates at the feet of Gamaliel. That his presence there seems to have awakened no public attention need not surprise us. His presentation in the temple when a child was a very quiet

affair, and no one of the great men there seems to have recognized the child-king, but that clear-eyed and prophetically inspired frail old man, Simeon. And as we have noted when he was twelve years old no one in the temple seems to have suspected that he was the youthful Christ, and yet they were amazed at his knowledge. Then on the supposition that he spent the most of eighteen years in the schools at Jerusalem in careful and thorough and intelligent preparation for his great life-work, let us not be surprised that his student life there was not made famous, for the time had not yet come for his open manifestation as the Messiah. That glorious commencement day, so to speak, came to him when John on the terraced banks of the Jordan said to the people of Jerusalem and of Judea and the whole world, "Behold the Lamb of God."

When all the prophets before him were careful to leave records of their teachings and work it seems at first a little strange that Christ never wrote anything, except once, and that in the transient sands of the earth. It surely cannot be charged to his inability to do so, but it may be accounted for on the grounds of intense devotion to teaching and wonder-working and that whatever was necessary for the instruction and guidance of his followers in the future would be carefully preserved by those apostles and disciples who stood nearest to him and who heard his words and saw his works for about three years. And this implied expectancy was most providentially fulfilled in the writings of the evangelists and the apostles. But as it has been respecting Christ, so has it been respecting these disciples, that many writers and speakers have joined in the calumny of the Pharisees that these were "ignorant and unlearned men"; that they were poor, "unlettered fishermen." And how often have they been selected as good illustrations of that ill-used expression that God has chosen the weak things of this world to confound the things that are mighty. This is another effort to exalt grace by depressing human ability, shamefully forgetting that they are both the gifts of God. But a careful study of these men and their writings will

bring a clear refutation of this bold reflection upon the intelligence of these wise and good men.

It is an important inquiry as to why so few of the apostles and disciples left any writings so far as known, and the answer to this inquiry is so full and reasonable that there is no good reason to question their intellectual ability. Matthew's gospel was published in Palestine and at such an early date, perhaps within five years after the Ascension of Christ, and some good writers place it earlier, and it was so full and satisfactory as to seem to need no supplementary and corroborative records. The other gospels were not written until some years afterwards. The most of the apostles when they were scattered abroad because of the persecution went either east or south, and those regions have never been famous for ancient manuscripts or writings. And while the monolithic records of Assyria and Egypt are mostly of a civil, political or military character, yet we have a lingering hope that some day the industrious spade of the archaeologist will turn up a slab, and the inquiring key of the diligent explorer will unlock some musty Oriental convent, and we will have some records of the labors of those confessedly intelligent apostles, Thomas and Bartholomew.

The Greeks and Romans never, to any considerable extent, made monumental records, but they preserved and diffused their language and literature by writings, and thus the apostles who remained and labored within the western bounds of the Roman empire have left us faithful records of their faithful labors.

And besides the confirmation of tradition, a careful study of Matthew's gospel proves the statement by Eusebius true, that the author was "a man of the widest general information, and well acquainted with the Scriptures," John Mark, the evangelist, who was for some time the traveling companion and assistant of Paul, and then of Peter, it might be inferred from these facts was a man of considerable intellectual attainments, as both of Paul's other and later companions, namely, Barnabas and Luke, were men of scholarly ability, as their writings abundantly prove. It must be admitted, however, that Mark's

gospel, while valuable for its details, yet it shows less of scholarship than any one of the gospels. Luke, in his gospel and in the Acts of the Apostles shows remarkable intellectual ability, and in the history of the Apostles he displays a vast amount of general information, historical, biographical, geographical and political, in any department of which he never makes a serious blunder. And as to John and his writings, there is no need for us to pause, for he was the Plato of Gospel philosophy; he was the Locke of evangelical metaphysics; he was the Baxter of all the saints rest, the profound lecturer in the school of Christ, and at the same time, a humble teacher in the kindergarten of the Master. Neither is it necessary for us to pause long to consider Paul and his writings, as it is conceded by friends and foes that he was a man whose intelligence was of a high order. He was educated at Tarsus and at Jerusalem, centers of learning. He was a prolific and yet concise writer. He wrote fourteen books of the twenty-seven of the New Testament and how much unpublished writings he left will probably never be known. And for those times he was a much traveled man and became well and for the most part favorably known in nearly all the intellectual centers in western Asia and southern Europe. And in one particular, especially, how different his letters from those of modern travelers over the same routes. He never speaks of "the blue Mediterranean," of "the Attic skies," or of "the Athenian splendors," or of "the grand out-look from the Acropolis," or of "the Coliseum, and Rome with her seven hills," of "the Forum from whose platform sounded the eloquence of Cato, Cataline and Cicero." But let no one think for a moment that these omissions indicate a deficiency in intelligence or observation or a lack of appreciation of all such subjects. His silence is rather proof that they were common to his mind. The boy with a few pennies will often show them, but the man with millions will seldom speak of his millions. Paul had been associated with great men all his life long. He met them in the schools of Tarsus and at Jerusalem. He knew the Herods, Felix and Festus, and the Roman officers, military and civil, who were his friends, except Nero and had

he not made the apparent mistake of appealing to Caesar, he possibly might have lived several years longer, but then we would not have had possibly his preaching in Rome, his letters from Rome and crowning it all, his triumphant martyr death in Rome.

Now let us think of his ten letters out of his fourteen, written in Rome and sent out from Rome; Rome the center and source of the Latin language and literature, although at this time largely Greek; Rome, the center and source of civil law and jurisprudence; Rome, then the mistress of the peopled world. And think again that nine of the books of the New Testament were sent out from that cultivated Grecian city, Ephesus, and four from that great commercial city, Corinth, and two from Jerusalem, the then religious capitol of the world, and one from Babylon, the source of Astronomy. Now, draw a line from Rome eastward, and around far off Babylon and around Jerusalem in the south, and around Ephesus and Corinth in the north, and then on and around Rome, and with one exception, you have included in this circumference all the great intellectual centers of that age and herein is the high intellectual plateau upon which Christianity was planted and propagated. The one exception is the city of Alexandria, but of right this city should be included in the area, for it furnished the text-book for the Saviour and the Apostles and Evangelists, the Greek translation of the Old Testament, the Septuagint which incorporated with the New Testament was the Bible of the Christian church for about six hundred years. And you will call to mind the fact that the four oldest Greek Bibles now in existence upon which critics chiefly rely for the original text of the New Testament were first transcribed in Alexandria. You will also recall that other significant historical fact that by an order from Constantinople, Eusebius had fifty-two copies of this Greek Bible made and which were distributed throughout the Oriental Christian Church. And while this city for some reason now unknown did not share in the labors of Christ or the Apostles yet Alexandria and Rome and Ephesus and Jerusalem were the great publishing centers of the first literature of Christianity. And out of the great school

of Alexandria came a trio of great men who more than any others were the wise master builders of that great creed of which the Nicene and all others since have been but modifications, the Athanasian creed, and that trio is Clement and Origen, Biblical expositors, and Athanasius the brilliant orator and logical debater. But you must not think of this as simply a theological school. In founding it Alexander spared neither men, nor time, nor money to make a school that should surpass anything Greece or any country had ever possessed. Its manuscript library contained 700,000 volumes. It was built on the comprehensive principle of an eclecticism, to select the best from all the known schools. Its catalogue and curriculum, therefore, was most extensive, embracing language and literature, poetry and philosophy, the natural sciences and theology. I am well aware that measured by a modern standard that school and all of its professors and pupils would be marked low in grade, but measured by any standard of those times, and this is the fair measurement, the school, the professors and pupils and library will easily take the highest rank. This, then, is our conclusion on this point that the propagators and defenders of the early Christian faith were men of broad and profound culture. I shall not, therefore, pause to speak of the other Greek or Latin Fathers as they are called, nor shall I spend much more time than to simply mention such names in Latin Christianity as Tertullian, Cyprian, Lactantius, Hilary, Ambrose, Augustine and Jerome. You will observe that I am not now set for the defense of their theological views, nor so much for their theological ability or ecclesiasticism as for their intellectual power. Allow me to mention Lactantius, whom Jerome calls the most learned man of his time, and who because of his rhetoric and philosophy has often been named a pupil of Cicero and Senaca; and also Ambrose, who was a judge, a statesman, poet and a bishop; Jerome, who was well trained in Greek, Latin, rhetoric and philosophy. And with one step coming down to modern times, no one who is himself intelligent will question the intelligent character of Luther and Melanchthon, of John Calvin and John Knox, of John and Charles Wesley.

What, then, is the significance of this brief summary? It is this, that the great and efficient propagators and defenders of Christianity from Christ, its founder, to our day have been men of great intellectual power. I do not intend to intimate that even ignorant men have not done much good, but that good may be lasting there have been always intelligent forces directing all their work. At times many of the people who form the under working forces of Christianity have not been intelligent, but in all the aggressive movements of the church for the conquest of the strong-holds of the enemy there have been many wise commanders who, like that great Commodore Dewey, who has justly earned his own immortal fame, tersely said, "Keep cool and obey orders." Neither do I wish to seem to minimize what is commonly called spiritual force, that occult power in Christianity. But as it requires intellectual power to find and utilize that occult electrical power, so it requires intelligence to properly interpret and apply occult spiritual forces. Modern evangelism proceeds too much upon the tactics of playing upon the forts of the enemy with only one battery, but I contend for a double battery of spiritual and intellectual power.

My young friends when you are asked to follow Christ you are not, therefore, asked to follow a blind or ignorant leadership. You are not asked to follow even an unreasonable spirituality, nor to accept a foggy mysticism, such as Buddhism or Theosophy, or kindred theories which have no foundation in Christianity. Follow not such will o' the wisps over their shaky quagmire under the delusion that you are being led by the true light. Christ is the only true light that lighteth every man that cometh into the world. Hold up your torch and get your light from Christ, the light of the world. There is the light of genius, the light of invention, the light of knowledge, but the most powerful scientific light now discovered are the X rays or radium light. And have you observed that the first are rays of light from a cross? And so the most powerful rays of spiritual light come from the cross of Christ. But some men say, I see by my own eyes. No, you see by the light of the sun. The Bible

is the fluorscope without which you cannot see the light of Christ. This very beautiful light here is but stored up sunshine which some man has imprisoned and it shines forth for our advantage. And whatever be your acquirements of knowledge you see by Christ's sunshine. How much have men seen in the midnight of Paganism as compared with what they have seen in the noontide of Christianity? Christ is no longer bending low on suppliant knee, asking for sympathy and patronage, he has already come to his coronation before the nations of the world, and so let us come and mingle our voices with the shout of the multitudes and crown him Lord of all.

CHAPTER II.

WHAT ABOUT THE OLD TESTAMENT?

The Bible is the most remarkable volume that has ever been published, since it records the most wonderful events which have ever transpired in the world's history, and covering an historical area of 4,160 years. These events are recorded in 66 books of which the volume is composed, and were written by 38 different authors or editors, ranging in time from Job, 1521 B. C., to the Revelation of St. John, A. D. 96, during a lapse of more than 1,600 years. And I do not pause here to furnish even small extracts of the inspiring poetry or the brilliant prose which has been written from time to time concerning this volume. (Refer to How the Bible was Made.)

My main purpose is to answer some questions which have often come to me, and no doubt to you as well, and mostly from young people concerning this wonderful volume.

1. What was the nature of the impulse that moved these different writers? 2. Was this impulse the same in nature and extent with all these 38 different writers, scattered along at intervals during the 1,600 years? 3. How did these books get into this one volume? 4. On what principles were these books accepted, and all other writings of that period excluded? 5. What is the basis of the authority, and the extent of the control of this volume in the affairs of human society? 6. Is the volume complete, or may other books, perhaps of equal authority be yet added to the volume, or is this a final revelation? If so, why?

As you will see, these questions are fundamental and cover a very wide range of thought and investigation, and I feel quite sure that I have neither time nor ability to exhaust either one of them in the space allotted to me. But something may be done by collecting and reciting the main facts which, it is hoped, may be of interest and instruction to young and old.

Did Moses write under the same or similar influence as Herodotus and Rollin, simply with a desire of making an accurate record of the facts and events of history, that they might be preserved? Did Job and David and Solomon write under the same or similar influence as Tennyson and Longfellow, and Bryant, the poets of society, of man and of nature? But whether the historical or the poetical writers of the Bible be considered they believed themselves moved by some kind of impulse of a more or less intense spiritual nature. And, as it respects not only the liability to error but the possibility of error as well, did the writers of the books of the Bible, and they only, possess an absolute exemption from this liability and possibility? And as we know that personally they were all human and therefore inevitably erring beings, they could not possibly be exempt from error except possibly when writing these records. Is there any proof that such is the case? And now we will be frank and confess that the proof here is not so abundant, clear, and direct, which seems to be necessary in sustaining such a high claim. If we were to assume that they wrote mechanically, giving out, like a phonograph, what, and only what, the divine impulse had stamped on the mind, there could be no possible error as the divine cannot err. But it is now generally admitted by a large number of able writers that there was no such overmastering self-subduing impulse. The evident characteristic style of each writer more or less marked and prominent shows the presence and self-active influence of the human mind along with the divine impulse. And now I may possibly shock your faith by saying that there is not a letter, or a word, or a phrase, or a sentence, or a paragraph, or a book in this whole volume that is literally divinely inspired! If the original copies of the Hebrew in which the Old

Testament was written, and the Greek, in which the New Testament was written, were now in our possession, which they are not, but have long since perished, we might modify somewhat the above statement. But inspiration is not something that can be run through a printing press, and fastened onto or into the printed page, much like the electric current can pass through a motor from the dynamo. And no inspiration can be taken off of the electroplates by which the Bible is printed. In what way, then, does that original impulse survive and affect our present Bible, or in what sense or senses may our English Bible, for instance, be said to be inspired? In these, in the ideas, in the thoughts, in the themes, in all of which it, as a whole, far transcends any volume ever written by man. This, then, we believe, is the sense, the true sense, and the only sense in which the Bible is now an inspired volume.

It may be said that such a position tends to weaken our reverence for the Bible, and lowers its moral force among men. If so, then this is perhaps unavoidable, as artist proofs of paintings or etchings are always more highly valued than mere copies. But with a mind clear and discriminating in its mode of thought, and free from superstitious reverence, such a position as we have taken will not diminish a just estimation of the Bible as the word of God. And we do not see that it is necessary to maintain that all of those 38 writers were moved by an equal measure of the divine impulse, but that they were divinely directed and divinely guided in their writing, must be constantly affirmed. That the editor of the book of Chronicles, for instance, was in measure, as fully inspired as Isaiah, is about the same as to maintain that the editor of the United States census is as much inspired as Longfellow, the one being largely a mere copyist, but the other reveals the inner and original impressions made upon his own soul.

The early Jewish writers divided the Old Testament into three divisions, which they named: the Law, the Prophets and the Sacred writings. It will be seen that these divisions are not very precise, as for instance, they are all sacred writings. These divisions, however, are

recognized in the same way in the New Testament. The Law included not simply the ten commandments by way of pre-eminence, which, however, no doubt, gave name to all the five books of Moses, now called the Pentateuch.

The Prophets embraced the following books: Joshua, Judges, 1st and 2nd Samuel, 1st and 2nd Kings, Isaiah, Jeremiah, and the 12 minor prophets.

The Sacred Writings include the Psalms, Proverbs, Job, Lamentations, Esther, Daniel, Ezra, Canticles, Ruth, Nehemiah, 1st and 2nd Chronicles, and Ecclesiastes. And it is worthy of at least a passing notice that Josephus speaks of only 22 books as acknowledged by the Jews as divine, but that is accounted for by remembering that some of the books as we now have separate, were attached to other books; as Lamentations was attached to Jeremiah, the mass of writings, however, was the same as we possess now.

But we regard it as a very important question as to how, and by what authority, these books were collected together and pronounced to be of divine authority. And in the first place we must not forget that those early times were abundant in records and that this fact would, as it seems to us now, greatly complicate the proper selection of these books.

The various slabs and monoliths which have been discovered in the East and doubtless many more will be found, show that almost every important event in those primitive times was made a matter of record. And how much the writers of the Old Testament depended upon or extracted from those records can never be fully known, for evidently, while they often say that many things which they do not record are found in those records, and indeed mention those books by name in many instances, still we know there were many other records unnamed by them. Sixteen books are distinctly named, but now lost; and eighteen others were still extant when they wrote.

Biblical critics have been very slow, and in some instances, wholly unwilling to admit that Moses especially derived anything from records in his day. I think the chief cause of the hesitancy to make such an admission

is occasioned by the extreme theory of inspiration which they hold. To admit that any extracts, verbal or substantial, had been made by Moses and other authors of the Bible, they think is a dangerous admission, and would ultimately lead to a total surrender of the Bible as the word of God. By claiming too much, the friends of the Bible have often done it more harm than its avowed enemies.

But it is now admitted, however, that there were records of some kind back of the Pentateuch, or co-existent with it, upon which Moses did somewhat depend, and from which he did make extracts; but how literally or extensively he used them, possibly we may never know. And, moreover, that there are inaccuracies and confusions in his writings, is beyond intelligent dispute; and whether these inaccuracies have been caused by errors in versions, or translations, or transcriptions, or whether they were made originally by the hand of Moses, or those upon whom he depended, cannot at this remote time ever be found out. But in making these admissions, we do not surrender the fortress, the divine origin and authority of the Pentateuch; we have only cut away the thick and modern undergrowth of extravagant and superstitious theories of inspiration and we are now therefore better able to see clearly the real, the rock foundation, of this part of the word of God. As a matter of fact not all that Moses professedly wrote was absolutely original with himself, as for example, he did not write his own obituary; that was added by another hand; but as God guided him through the wilderness, so he guided him in writing, and collecting and editing the five books commonly ascribed to him. And all the inaccuracies found in the books are so comparatively small, that when considered by the side of those stupendous truths which he records—they are like dwarfs standing at the feet of majestic pyramids.

And we should not forget that the Jews were punctilious to a fault in observing the smallest letter, especially of the Torah, or the Law, the Pentateuch, hence it is hardly possible that any serious change could be made and they not detect it, for they had counted actually every

letter in the whole five books, in fact, of the entire Old Testament,

And further there was no motive for them to change it themselves. And again the Samaritan Bible embraces the Pentateuch alone, and this gives great force to the Mosaic origin and divine authority for these books. And this fact does not cast any discredit on the remaining books of the Old Testament, when we remember that the Samaritans separated from the Jews proper after the return from Babylonian captivity, and before the final collection of the sacred books in the time of Ezra. Hence, whether Moses actually wrote all that is in the Pentateuch or not, that he was its author and editor is as clearly demonstrated as any other proposition refering to so remote a time.

It does seem, however, truly strange that the very books of the Bible that have been, as we have seen, the most highly venerated alike by Jew and Samaritan, and have stood unchallenged for so many centuries should, in these latter days, be the most violently attacked by critics; but perhaps they think that destroying this grand facade to the edifice of revealed truth, battering down this strong gateway to the shrine of the divine oracles, then the utter demolition of the whole structure would be easy.

But whole armies of infidels and critics have come and viewed this facade and this gateway, and they have gone the way of all the earth, and still the foundations of divine truth stand secure.

But it is not my purpose to discuss the personal authorship of each of the books of the Bible; and indeed, I do not attach as much importance to that subject as has been given to it in the past. It has its value, we admit, but there are other matters of more importance in this discussion than this. And we therefore proceed to inquire how all the books in the Old Testament were collected together. It is admitted that this collection and arrangement of these writings, mostly in their proper order of time and events, was begun on the return of the Jews from the Babylonian captivity, during the days of Nehemiah, and under the sanction of Cyrus. The last book of the Old Testament, Malachi, was written about

397 B. C., and about this time Nehemiah organized the Great Synagogue, composed of the chief priests and eminent scholars of that time, and of which, perhaps Nehemiah was the first president. Ezra was a member of this Great Synagogue, and he was selected to collect and arrange the sacred writings.

This eminent body of 120 intelligent men had a number of meetings from the years 400 to 300 B. C., and they bound themselves by an oath to faithfully reconstruct the Jewish system in all of its essential features. One of the objects of this organization was to make copies of the only sacred books to be read among the Jews; in a word, they were to fix what has been called the Jewish canon. That they were competent to do so, no one will question, and that they did so is generally conceded. That this was all done at one sitting, or during one year, is not probable, but their work must have been done during that period as the organization ended with Simon the Just, 300 B. C.

Now, it should be remembered that this body of eminent men made a collection of the sacred books written, down to that time, but that they never by any decision left to us the fact that the canon was closed to the exclusion of any books which might yet be written by some competent authority. No such intimation even is on record.

The Apocrypha

This brings us to the consideration of the subject commonly called the Apocrypha. Between the Old and New Testaments, in your old Bibles, you will find a number of books, some say 12, others 14, accordingly, as you separate them from each other, called Apocrypha. As applied to these books, the word is unfortunate, as it is synonomous to spurious or forgeries, while in fact, they are neither. The treatment that these books have received by both Jews and Christians has been various, and withal, very interesting. The time was when they were received by both Jews and Christians as Scriptures, and as is known, stood on an equal authority with all the Old Testament writings except the Pentateuch, which always

has had pre-eminence in the esteem of the Jews. After the predominance of the Greek language in all Western Asia and Eastern Europe, after the Conquest of Alexander the Great, about 344 B. C., the Hebrew language declined and ceased to be the language commonly spoken. Hence the translation of the Jewish Scriptures into the Greek became all-important. And we regard this as one of the most striking providential events in the history of the world. Since Asia, and Egypt, and Europe, indeed, we may say the whole world, had become Hellenized, to have the Scriptures then translated into the prevailing language of the world, that they might be widely diffused, as we now know they were, was a grand missionary enterprise.

Stripped of all fable, the main facts are as follows: 1st—The Septuagint is a proper name, as there were about seventy Jews engaged upon the work. 2nd—They had a copy of the Jewish Scriptures before them from which they made the translation. 3rd—It was done by the direction of Ptolemy Philadelphus, an enlightened king of Egypt. 4th—That Alexandria, and not Athens, was at that time the intellectual metropolis of the Greek-speaking people. 5th—That the work was begun about 280 B. C. and was completed, if not in 72 days, as some accounts say, it was finished some generations before the coming of Christ. 6th—That this was the accepted Bible throughout the Roman empire for the space of about 300 years. 7th—That it was the Bible from which the Savior and the Evangelists and Apostles quoted more than 350 times, besides many allusions, and of which they spoke in such profound veneration. 8th—That this version was held in high esteem by Jewish scholars in the Apostolic age. A contemporary of Josephus, Rabbi Symeon, is quoted in the Talmud as saying, "that it was lawful to write down the Sacred Scriptures and to read them in public *only in the Greek language*, and not in foreign tongues." Frankel, a modern Jewish scholar, who has devoted great attention to the subject, declares that the Septuagint is habitually referred to in the Talmud in terms of the highest respect. Dr. R. Smith says that "Early Rabbinnical tradition expressly recognizes the Greek version as legiti-

mate." 9th—All the Greek Fathers quoted from this version and held it in high regard, and Irenaeus says when the copy was first presented to King Ptolemy, "he perceived that it had been interpreted by the inspiration of God." It is known that St. Augustine placed it on a level with the Hebrew Scripture. He said "That although the words were not the same, yet the same meaning shone forth to those of sound understanding." (Old Testament Revision by Roberts, page 167.) 10th—That this version is still the Old Testament Scripture of all the Greek churches, and from it the Old or African Latin, the Egyptian, the Ethiopic, the Armenian, the Gothic, the Slavonic, and some of the Syriac versions were made. 11th—The four great early Bibles of the Christian era, Aleph B. A. and C., contain the Septuagint more or less perfect, and they are now relied upon as the best authority in the revision of the Greek Testament. 12th—No one of these early Greek Bibles was known by the translators of King James' Bible in 1611. They had only one uncial MS. D., and this is now believed by critics to be more imperfect than the others referred to, and it did not contain the Septuagint. But King James' translators did translate the Apocrypha, but it is not known from what source, perhaps from the Vulgate, or some of the Eastern versions or possibly the Septuagint itself.

As we shall see it is chiefly then to King James' translators that we are indebted for the discredit that has been thrown upon these books in modern times. I cannot here and now go into a detail of the various arguments for and against the Apocrytha, but I may give a few points only.

1. The translators of the Septuagint found those books in the Jewish copy used by them when they commenced their labors in 280 B. C.

2. They were then recognized by the Jews and have ever since been recognized as Scripture by the Greek-speaking Christian churches of the world.

3. It is to later Jewish influences, however, I think that we are to look primarily for the cause of the discredit of these books.

4. After the Christian Era the Jewish scholars established in the East three great schools, known as Sora, Tiberius and Pembaditha.

5. About the eleventh century the Arabs drove the Jews out of their country and schools, and many of them settled in Southern Europe, Spain, France, Italy and Germany. Here they were less disturbed and at once established centers for the cultivation of Hebrew learning.

6. They brought with them some Hebrew MSS. The oldest manuscript of the Old Testament, now known, is supposed to be of the sixth, some say of the tenth century A. D.

The first Hebrew book in Europe was Rashi's commentary on the Pentateuch, published at Reggio, Italy, in 1475. The first Hebrew Bible was published at Soncino, Italy, in 1488.

7. Now, as the Jews had been conquered by a Greek-speaking army in the East, on the revival of the Hebrew in the West, it is but natural that they would cast discredit on the language and literature of their oppressors, and would go back to the language and literature which had come down to them from Moses to Ezra, and especially that literature which had been confirmed as sacred by the Great Synagogue of which Nehemiah was probably the first president. Hence those books of the Apocrypha, written in Greek, as most of them were, they were now disposed to reject as being sacred, or of equal value to the others.

8. And gradually some of the early Christian writers began to speak of them as being worthy to be read, but not to be considered of equal authority with the other books of the Old Testament. Jerome was about the first Christian writer who began to speak disparagingly of those books, and this may be accounted for largely from the fact that he made his Latin translation, called the Vulgate, not only in Palestine, but largely his translation of the Old Testament was made by a Jew who was his assistant, as Jerome did not understand much of Hebrew or Greek. In proof of his prejudice against the Greek,

Jerome separated from the books of Daniel and Esther, those strong Greek portions and removed them to the latter part of the Old Testament; and which has thrown those books into almost hopeless confusion. It seemed a sufficient reason for Jerome to reject any book or part of a book from the Old Testament canon which he found in the Greek language. Indeed this prejudice against the Greek soon went so far among Jews as to consider the Hebrew exclusively the sacred language, and the Greek as a heathen tongue. And we have long believed that this is one important reason why the Jewish nation rejected Christianity, that it was introduced in the Greek language. And we believe that those Alexandrian Greek Jews, some of whom as chief priests came from Jerusalem for the purpose of making this translation, were as competent in every way of deciding what books should go into the canon of Old Testament Scripture as were the Jews of the Great Synagogue in the time of Ezra.

In 1534 Luther published his complete Bible in which he named these books Apocrypha, and said of them that "They are not to be considered as equal to (Hebrew) Holy Scripture, and yet are useful and good to be read."

But the famous Council of Trent, perhaps the most important convention of Christian scholars of those early times, adopted those books for the most part as canonical but placing them in a different order from Jerome. And there is no special reason why the church of Rome should adopt these books as favoring its doctrine or polity. The Church of England, in the first book of Homilies in 1547, and the second in 1560, and the 35th Article in 1562, all cite these books as Holy Scriptures. And in the preface to the book of Common Prayer they are referred to as being "agreeable to" the Holy Scripture. But the Calvinistic churches generally treat them as merely human writings and of no divine authority. The Dutch confessions take a middle ground, allowing them to be read in the churches, but no doctrine is to stand on their testimony alone without the corroboration of the other books of the Bible. The Methodist Episcopal Church is not exact in its teaching on this subject. It treats as

Holy Scripture, "those canonical books of the Old and New Testament of whose authority was never any doubt in the church."

Luther doubted the canonicity of Hebrews, James, 2nd Peter, 2nd and 3rd John and the Apocalypse, and he is far from standing alone in this opinion. Thus we reach the modern times in this discussion, and find the sentiment strong in favor of rejecting these books as a part of the Bible. But we can not account for this sentiment on this general principle, that in these latter times the tendency of criticism is to eliminate from the Bible all doubtful passages, and, of course, all doubtful books; some advocating that it would be better to cut down the canon still more by omitting some books from the Old Testament, as the Song of Solomon, for instance, and perhaps the book of Revelation from the New, and we believe such might be done, and indeed still other books might be omitted and we would not suffer much loss, as we would still be able to defend the Bible as the book from God.

But our preference would be to enlarge the canon by going back and replacing those books of the Apocrypha where they were before Christ and during his time and the time of the Apostles. This would furnish a common basis of Scripture upon which Christians of all lands and creeds could unite, which would not only be a grand consummation, but would destroy a potent argument now in the hands of infidel critics. And if these books were placed in the Bible they would more certainly be preserved, and all have agreed to this much at least—that they are valuable for instruction, and are an important link between the Old and the New Testament.

Text of the Old Testament

Thus far we have spoken chiefly of the books that have constituted the Old Testament and how they were selected, but we must now say a few words about the text from which the Old Testament has been translated into English. It seems certain that the Roman Catholics, in their English Bibles as well as others still follow closely the text of the Vulgate, that Latin translation made by

Jerome and a Jewish Rabbi in Palestine. They pay little attention to Hebrew MSS. new or old, no matter how valuable they may be considered by textual critics. And, withal, it is gratifying to know that so little variation has been found between the best Hebrew MSS. and this ancient version, since the differences have not been great enough to furnish a safe foot-hold for modern infidels. This Latin translation was based upon both the Septuagint and some Hebrew MSS., and after many revisions the text was fixed under Clement VIII in 1592.

This Latin version by Jerome was preceded by the Old or African Latin version, only fragments of which now remain, and which was made direct from the Septuagint alone. And the Vulgate was to a large extent, but a revision of this African version which was counted very valuable and was retained especially in Africa for some time after the adoption of the Vulgate elsewhere. And it should be remembered that this was the Bible from which the Latin Fathers quoted as the Septuagint was the Bible from which the Greek Fathers quoted.

From the middle of the ninth century portions of this Latin Bible were published in German by the Roman Catholics, and the whole Bible in German appeared before the invention of printing and five editions were published before 1477. Luther spent 12 years upon his Bible, and it was first published in parts, and finally completed in 1534. There were 38 editions of the New Testament alone. He had no Hebrew MSS., but one Hebrew Bible published at Brescia in 1494, a reprint from the text published at Soncino, Italy. And how much Luther and his associates used this Hebrew Bible is not known, but most likely not very much or very critically, as they were not considered critical Hebrew scholars, and surely would not be so considered by the standard of to-day. They no doubt depended mostly upon those preceding Catholic German translations and the Vulgate. Down to the time of King James' translation in 1611, all versions in England, Germany, France, Spain and Italy were derived mainly from the Vulgate and Luther's Bible, for this reason if for no other, that these versionists for the most part did

not understand enough of the Hebrew to rely critically and independently on the Hebrew language.

We here make the following table:

First Hebrew book in Europe, Rashi's commentary on the Pentateuch, Reggia, Italy, 1745.

First Hebrew Bible, Soncino, Italy, 1488.

First Hebrew Bible by a Christian, Cardinal Ximenes, Alcala, Spain, 1522.

Hebrew Scholar, John Buxtorf, first Protestant Rabbinical Bible, 1611.

We may now give a kind of genealogy of the principal Hebrew texts which are relied upon for textual criticism.

1. That of Ben Asher who lived at Tiberius in the tenth century.

2. That of Joseph Athias, published at Amsterdam, 1661. He consulted two Spanish MSS., supposed dates, one about 761, the other 1209.

3. That of Vander Hooght at Amsterdam, 1705, text same as that above. This is the text used by Bagster.

4. Letteri's Bible, Vienna, 1852, a revision of the above text. This is the text used by the British and Foreign Bible Society.

5. The text of Bomberg, Venice, 1525-1526. But after Vander Hooght, the Bomberg text "was the basis of all subsequent issues." (Alexander Roberts, D. D.) The editor of this text was a learned Jew, Jacob ben Chasin, who adopted the pointed text.

6. What Hebrew MSS., if any, were consulted by the revisors in 1611 is not known.

7 The text adopted, if any, by the revisors in 1881 is not known. But it must be admitted that since 1611 our facilities for critically studying the original text have been greatly multiplied. It is true that the Massoretic or vocalized or pointed text had been made by eminent Jewish scholars as early as 600, who had their headquarters in the school of Hillel at Tiberius, Palestine. The other

great Hebrew school was called Shammai, and located at Babylon. And, as a result of vocalizing the text and writing the Mishna a long and bitter controversy sprang up, mainly between these schools, not, however, as to the correctness of the reading according to the pointing, which, of course, did fix more definitely the reading, but as to the right of vowelizing the text at all, as it had been without vowels, and perhaps all marginal notes from the beginning.

And this controversy, instead of jeopardizing the text, has been a providential blessing in making these two divisions of the Jews watch with a jealous eye, the purity of the text.

The school at Babylon held to the unpointed text, and rejected the entire written Talmud. And since 1611 a collection of unpointed MSS., called Karaite MSS., consisting of 138 volumes, has been discovered and placed in the British Museum. The Karaites are a highly respected class of Jews in Russia. The dates of these MSS. run from 958 to 1045.

Here, then, is another great safeguard to the purity of the Hebrew text, for there are still those among us who prefer the unvowelized text. And yet with all these discoveries there are no important doctrinal or historical changes made necessary by the comparatively small number of verbal differences in the MSS. And Hebrew MSS. are not rare, for Kennicott alone has collected 581, and DeRossi almost a similar number, besides the labor of other Hebrew scholars. But this is not all. Notwithstanding the great ocean of Talmudic literature, consisting of twelve immense folio volumes, and all of it originally written by Jewish scholars since the beginning of the Christian era, consisting largely of critical notes and commentaries on the Hebrew text, yet that the text stands substantially as it was in the beginning, is cordially agreed to by both Jews and Christians.

Neither have the three Greek versions of the Old Testament since the Christian era, that of Aquila, of Theodotian, or of Symmachus, or the Syriac versions, also made since the Christian era, cast any serious doubt on the purity of the Old Testament text. And what have in-

fidel critics to say? They have not all been ignorant and destitute of that general knowledge and critical skill necessary to pronounce an intelligent verdict on this subject. But it is a fact, however, that most of them have totally neglected or refused to carefully investigate the subject themselves, and have been content with pointing out verbal inaccuracies, superficial contradictions, and recorded events of the ancient times, the moral character of which they claim cannot be justified by the acknowledged moral standard of to-day. But the answer to these objections which has been made a thousand times, does not fall within the line of my argument; but I have this to say, that, to my knowledge, no infidel has gone deeply into and through the history of textual criticism and published to the world, even a small volume in attempt even to show that we have not the Bible to-day essentially as it came from the pens of the original writers.

But some of them have not been slow to stand before public audiences and in fulsome and rhetorical manners declare as follows: "Nobody knows who wrote these books, nobody knows where they came from, nobody knows why they should be considered different from hundreds of other books of simply human composition."

This, then, in part, is why I have taken the time to prepare these pages. And I trust that by what I have been able to present, and much more lies scattered over the fertile field of inquiry, that you will be helped to see that your faith in this book as a divine record, does not rest upon a quivering quagmire of uncertainty, but upon the granite rock of historical truth which neither the ravenous tooth of time nor the violent attack of skeptics can ever destroy.

CHAPTER III.

WHAT ABOUT THE NEW TESTAMENT?

The New Testament is made up of 27 books, of which Paul wrote 14, more than on-half, and the other 13 books are distributed among seven authors. The books were not written at one time nor place, hence no collusion could be possible.

The first was written by Matthew about 38, that is his Gospel, probably first written in Hebrew; and the last by John about 96. Thus between the first and the last book written was a period of 58 years, more than half a century.

Matthew's Gospel had been in existence about 16 years before Paul, the next writer, in order of time, wrote the Thessalonians. He had then a written Gospel which had been read in the churches for 16 years to depend upon in his writing of first and second Thessalonians in the year 54, and Gallatians in 58, and 1st Corinthians in 59, and 2nd Corinthians and Romans in 60.

Peter wrote his first letter in 60, and James also wrote his letter in the same year. Thus Paul, and Peter, and James had the use of the Gospel of Matthew for the Gospel facts which they made use of in their writings for about 22 years.

But these Apostles were eye witnesses of the principal facts of the Gospel history, and could correct Matthew's record if found to be incorrect, but in no single instance do they do this. Luke published his Gospel in 63, and the Acts of the Apostles in 64. And the same year Paul published Ephesians, Collossians, Phillippians, Philemon,

and Hebrews. In the publication of these books all in one year, with all his missionary work, Paul must have been a very busy man. He had before him two Gospels, Matthew and Luke, and the letters, 1st Peter and James, and yet he finds nothing in them to correct or contradict.

The next year (65) Paul wrote his 1st Timothy and Titus, and Mark wrote his Gospel, and yet in no one of these books do we find anything to contradict what had been written before. The next year Jude wrote his short letter, and Peter his second letter, and Paul his second letter to Timothy, the last of his public writings which has been preserved. Paul still finds nothing in the writings of the other Gospels or the other writers to contradict what he had written twelve years before, and what Matthew had written 28 years before, but on the other hand all they had written had been so repeatedly confirmed that it is no wonder we find him so confidently triumphant at the last in saying to Timothy: "Hold fast the form of sound words which thou hast heard of me in faith and love which is in Christ Jesus." And again he said to him: "Nevertheless the foundation of God standeth sure." And still again he says: "All scripture is given by inspiration of God, and is profitable for doctrine, for reproof, for correction, for instruction in righteousness, that the man of God may be perfect, thoroughly furnished unto all good works." Then he speaks in emphatic enthusiasm and enjoins him to "preach the word."

And now the climax is reached as he here reviews his writings and his work, and takes a fore-glance of things to come, and like the swan, his dying song is the grandest of all, though clanking in his chains, when he exclaims: "I have fought a good fight, I have finished my course, I have kept the faith."

And now, if the New Testament record ended here we would have abundant evidence to establish the truth of Christianity. Indeed I would be willing to let it rest alone upon the teachings of Matthew and Paul. Men might call in question whether Matthew's Gospel was genuine, but Paul's writings confirm the Gospel facts, and much of Paul's writings have never been called into question by any intelligent person.

But this is not the end of the word, nor the sum of all the testimony. Paul never saw a copy of John's Gospel or any of the writings of John, but his faith did not need this additional evidence.

John wrote his Gospel and the three letters in the year 90, and the Revelation in 96. He having the three Gospels, and all of Paul's writings, and the three letters, Peter, James and Jude, before him, he evidently did not think it necessary to repeat what had been so well said before by the other Evangelists, hence his Gospel is considered supplementary to the others, and furnishes much new matter omitted by the other writers. Thus we have given a hasty review of the writings of the New Testament, and the relation they sustain to each other, and the grand truth they were written to support.

Now it is of interest and seems providential also that these books were written and sent abroad from the following cities: Ten of them were written in and sent out from Rome, nine of them from Ephesus, four from Corinth, two from Jerusalem, one from Babylon, and one (Jude) uncertain as to the place. These were the acknowledged centers of learning in that day, so that the literature of Christianity started from the highest and most intellectual plain of that age. Perhaps one reason why only two possibly were published from Jerusalem was that the Jews, as a nation, having rejected the Messiah, the Evangelists and Apostles turned their attention to the great centers of Gentile population. By Roman authority they were scattered abroad.

Think of ten of these books going out at different periods during that fifty years, and going out from Rome, as we have shown, the then mistress of the world, and nine of them going out from that cultivated Grecian city of Ephesus, and four from that great commercial city of Corinth, and two from the great source of Judaism, Jerusalem, Matthew and James, and one from far off Babylon, the first book of Peter! See Rome in the West, and Babylon in the East, and Ephesus and Corinth in the North, and Jerusalem in the South, and you behold the vast populations of that early time embraced in the area of the planting of Christianity, and the diffusion of its

light and power in saving the world. And it is a matter of continued surprise that these twenty-seven different books having been issued from such widely separated points, when brought together and diligently and honestly compared, should be found to differ so slightly, and harmonize so grandly on the stupendous facts and events which they all relate. And inasmuch as collusion is out of the question, is it unreasonable for a man to say, "I believe that they were guided by an unerring Spirit in writing those records?"

Inspiration of the New Testament

This brings us to the question of the inspiration of the New Testament. What was the impulse that moved them to write these books? Did they do so for literary fame? They were men who were not looking for the honor that comes from men. From our standpoint it would be considered exposure enough to the cruelties of the times to preach the doctrine of the Nazarene; but to write it down and send it abroad would greatly augment their cruel persecutions. They, in their writings, tell us that holy men of old, those ancient Jewish writers, spoke as they were moved by the Holy Spirit, but now how was it with themselves?

These Evangelists and Apostles had received power from on high, the baptism of the Spirit, when they entered upon their public mission, and that same divine influence was witnessed in the wonderful works which attended their ministrations, and when they wrote their letters, they were as truly preaching to those people as if doing so by the word of mouth; but, of course, because of the absence of the inspired writer in person, the same wonderful results did not usually follow the reading of those letters. And yet it would be easy to furnish many notable instances where wonderful spiritual results have followed the proper and devout reading of the New Testament, as in the cases of Luther and Wesley.

But their humility and modesty might prevent them from saying much personally about self-inspiration, and yet the most of these writers either directly or indirectly,

confess that they were moved by a divine impulse, not only in speaking, but in writing as well; and we ought, in the absence of any other sufficient motive, to accept their statements.

And their statements are clearly corroborated, as we have noted, by the divine influence that has attended their preaching and writings.

Let me now state a strong case against myself for the sake of the argument. Suppose that some minister in our day should write and preach a sermon on some Gospel theme, and then print and send abroad that sermon, and a powerful influence attends the delivery of that sermon, and letters received tell him of the deep spiritual influence of that sermon on those who have read it. Now, then, was that minister inspired, and should not that spiritual sermon be received as Scripture? Would not that sermon stand on the same or a similar basis as the letters of the Apostles? I have had this case stated to me and it is regarded as a strong putting of the case.

The positions, at first view, seem very similar, but in truth they differ widely. First of all, not many persons claim that there is now, and for good reasons, as full measure of spiritual power in the world as at the Apostolic period. And second, these Apostles were chosen and endowed accordingly to establish Christianity as a new institution in the world, and this they did by preaching and writing chiefly its foundational facts and events. And that work has been sufficiently done by a sufficient number of persons and writings, so that more of the same kind would be a needless repetition, and could add no conceivable weight of testimony; so that now a man that will reject Christianity as set forth in these New Testament writings, would reject a whole library of similar testimony on the same subject.

But the case is faulty in another respect. Suppose that sermon was inspired, and we may freely admit that it was, for I am sure that I have heard many sermons that have been attended by a spiritual influence as truly if not as fully as any sermons Paul ever preached.

The fact of inspiration itself is not a sufficient reason for deciding on what must be recognized as Holy Scrip-

ture. As we have already more than intimated, there was a divine purpose in those writings of the Apostles and Evangelists which cannot be exactly paralleled in any subsequent period; and that purpose was the founding and confirming of Christianity in the world. It is true in a subordinate sense, that every true Christian life does this in its measure, but that is not the main purpose of any life to-day, humble or however exalted. So that the supposed case falls, and the Evangelists and the Apostles and their writings, stand grandly prominent in spiritual influence, and for a pre-eminent purpose, that Christianity is a divine institution.

And further, it is not of much profit to institute a comparison of spiritual endowment between the New and Old Testament writers, but it is sufficient to know that both classes were divinely guided to a divine purpose. But if the comparison is made, I think that the New Testament writers possessed the higher inspiration. This last was to be in a higher degree a spiritual dispensation, and the prophets had foretold an extraordinary out-pouring of the spiritual power in the Gospel times, of which the chief agents would receive an unusual measure, and all of which was literally fulfilled in New Testament times.

New Testament Canon

We are next to consider at what time and by what method, their writings were collected together, so as to constitute what we now call the New Testament.

You will recollect that at the first, these books were widely scattered even from Babylon to Rome, and lest some of them perish, either by time or in the fires of persecution, it surely was a wise suggestion, let it come from what source it did, to collect these books together. It is known that the Emperor Diocletian instituted a destructive persecution against the Christians; and one of his chief purposes was to destroy all those writings upon which the church would rely for proof of the new dispensation. But in this, of course, he was not successful, and it is fortunate for us that we have a catalogue of

those books, made before this persecution, and which corresponds with the New Testament, in the main, as we have it now.

This catalogue was made by Origen, of Alexandria, the profoundest theological scholar of his time. He was born 184 and died at Tyre 254. In 204 he was at the head of the famous Alexandrian school, and in 215 he established a similar school at Caesarea, Palestine, where so many of the Greek fathers were educated. His critical-exegetical labors were immense and valuable.

Eusebius has left us a similar catalogue. He was born at Caesarea, Palestine, about 260. He was a student of theology at Antioch under Dorotheus and afterwards at Caesarea under Pamphilus, a pupil and ardent admirer of Origen.

But that this important subject of the canon should not rest upon the individual judgment of even such eminent Christian scholars as Origen and Eusebius, the matter was reviewed in many of the early church councils, and the New Testament catalogue, as we now have it, was formally ratified by the third council of Carthage 397. And altogether there are now extant ten early catalogues of the books of the New Testament, and of these, six agree exactly with our New Testament, while of the other four, three omit only the Apocalypse and one omits this book and Hebrews, and these omissions can be satisfactorily explained.

And it is worthy of note also that these catalogues, like the books themselves, were made at widely different and distant points, and yet that they should so exactly agree ought to establish the most profound confidence in the New Testament record. And that the question should be officially settled at Carthage is also worthy of special notice. Carthage was a famous city on the north coast of Africa, and long the rival of the proud city of Rome, but at last conquered by Rome 146 B. C., and for many recent centuries, even the place of its founding has been obliterated, and we are now just beginning to find the ashes of its ruins. Carthage was the birth place of Tertullian in 160, and of Cyprian in 200, and the seat of a

metropolitan bishop. Here the church held fourteen different councils, and the third was held in 397, which ratified the canon.

It was at this council where the famous African bishop, Augustine manifested his wonderful influence and theological power. A convert under the celebrated Ambrose, a master in theology, a scholar of profound learning, a bishop of Hippo for 35 years, it was largely to his ability that the canon of the entire Bible was confirmed, and it should not be forgotten that it included the Apocrypha also.

Thus is it seen in what a public and intelligent manner the question of what books constitute the New Testament, and indeed the whole Bible, was finally determined.

And now at this remote time it is not possible for us to know all the points which were considered, and on which they based their decision. But one very important point, however, was that these books had been read in the churches and approved by them for many years. Another valuable consideration was that they were written by an acknowledged Evangelist or Apostle. These were the strong points which mainly determined the catalogue. No doubt the purity of their language, their high moral tone, and the deeply spiritual themes which marked them off more or less distinctly from all other writings of their day had great weight with them. Indeed we may say there was almost universal consent, especially by the earliest councils and fathers, as to these books. It is true that most of the early fathers questioned the Pauline authorship of Hebrews, but few denied but that it belonged properly to the canon. Some doubted, also, the right to admit James, Jude, 2nd Peter, 2nd and 3rd John, and the Revelation, into the canon; but they were finally nearly all agreed that these should be recognized as Scripture.

But it may be rightly asked if all these books are properly Holy Scripture, may it not be that some books were left out that should have been received? It is surely true that there were many other writings of a high grade in those early times, and of which they had personal knowledge, and which they often referred to. You will recall what has been said about the Apocrypha of the Old Testa-

ment. So likewise the New Testament has its Apocrypha, or books not accepted, although not so named. There are only four books that are worthy of mention, and first among these is the Epistle of Barnabas. You will know that he was the distinguished traveling companion of Paul, and hence anything he might write would naturally receive considerable attention; and although it is found in two good MSS., the Sinaitic and the Claremont, and it was referred to by Origen and Clement, yet it was never accepted by any council, as canonical.

Another book of high quality is named Shepherd of Hermes. It is also found in the same manuscripts referred to above, but it was never accepted by any council.

Another valuable document is, "The Epistle of Clement to the Corinthians." There were two of them. These letters were of early date, not later than the time of the Revelation MS., and they are found in the Alexandrian MS., and in the Apostolical Canons, and they were read in the churches, and were accepted by Eusebius, and the council of Laodicea permitted them to be read in the churches. But they were finally declared uncanonical and hence were excluded.

The last book to be named is "The Apocalpse of Peter." It is found in the Claremont codex, and was placed along side of Revelation in the catalogue of Muratori, and was held in high esteem for many years, and was long preserved among the Coptic Christians, but was not admitted into the canon. I think the New Testament would not have been seriously harmed by admitting these books, but on the other hand, it would not have been materially strengthened by them. They are valuable documents, however, as relating to the literature of that time, and should be carefully preserved.

But there was a large number of writings which appeared during the Apostolic era and immediately thereafter, which have never been advocated by any considerable number of scholars as being worthy to be called Holy Scripture.

There are known to exist more than half a dozen other Gospels, and more than 22 Epistles, and ten other writings, mostly in Greek, written mostly during the first four

centuries. During about the same time also, there are about thirty Gospels and 37 other writings referred to by the early writers, but which documents are not known to be in existence. We have recently discovered some of them, and more may be found, but no one expects much from them, either for or against Christianity.

That these Apocryphal Gospels and spurious epistles were never referred to by the New Testament writers, as possibly some of them existed during the later writers, is proof how utterly unworthy they considered them to be.

False Christs arose, and also false writings, but the early church seems to have had but little trouble concerning them, particularly their writings. And the fact that the church, during the first three centuries, utterly repudiated these writings proves the critical care and ability of the early councils.

Strauss, knowing of these false writings, made a strong effort to place the New Testament writings on the same basis, and thus he gained the notoriety of advocating the mythical theory of the origin of all those writings of the Gospel period, and no infidel effort ever failed more ingloriously than this. The early church had no trouble with those spurious writings, and it is too late now to make a sincere attempt to involve the church in trouble concerning them, or to prove that they were originally of equal value to those now accepted by the Christian Church.

Inasmuch as the original writings, the autographs, of the New Testament writers have long since perished, how can we be sure that we now possess in truth the New Testament at all? You will recollect that the canon was finally determined about 397. We have a Greek manuscript dating back to that very century, and which critical scholars have named the Sinaitic, because it was discovered in 1859 by that eminent critic, Tischendorf, in the convent of St. Catherine, at the foot of Mt. Sinai. This is a magnificent old Bible containing the old and New Testaments, including the Apocrypha, the Epistle of Barnabas, and part of the Shepherd of Hermes. The parchment is made of fine material, perhaps the skins of

young antelopes. It has 346½ leaves, 149 of the Old and 147½ of the New Testament, and each leaf is 14⅛ inches long and 13½ inches wide. The Old Testament has two columns to the page, and the New four.

The original copy is now in St. Petersburg, Russia, but copies were first published at Leipsic in 1862, at the expense of Alexander II, in four volumes. Copies of this edition are now in the Astor, Lenox, the Union Theological libraries at New York, at Andover and other libraries in the United States, as well as in the principal libraries of Europe. It was written at Alexandria about the middle of the fourth century, and thus we are directly connected with the council of Carthage where the same books were adopted as the canon, except the last two.

This is regarded as the oldest and best of the early Greek Bibles, and was chiefly relied upon by the revisors of the Bible in 1881, and is the principal text used in many of our theological seminaries. But we are not dependent upon this early Bible alone. There is another of the same century, and also written in Alexandria, but the transcriber seems to have been suddenly interrupted in his work, as he stops at Hebrew 9:14. There are other small parts of it wanting but it included, with the above exceptions, the Old and New Testaments. It is a beautiful MS., and is now in the Vatican library, and hence is called the Vatican Codex. For many years no Protestant scholar was permitted to see it. It is written on very fine vellum, and contains 759 leaves, 613 in the Old Testament, and 146 in the New, and each leaf is 10 inches long, and 10½ inches wide, and has three narrow columns in clear legible writing.

There is another very important Greek Bible, also written in Alexandria about the fifth century, and is named the Alexandrian MS. It contains also both Testaments, and also the first and part of the second Epistle of Clement at the end of the Codex. It contains 773 leaves, 12¼ inches long, and 10¼ inches wide, and having two columns to the page.

There are two other early Greek Bibles of about the same date as the one above, and also written in Alexan-

dria, but are not so complete as those described above, and we will not pause to speak of them. Now you will have noticed how complete these three Bibles are, and that they were written in Alexandria, which confirms our former statement that that city was the metropolis of the early church; and that it was the headquarters for critical scholarship in theology.

Along with this is another important historical fact. About 332, 45 years before the settlement of the canon (397), Constantine, who greatly admired Eusebius, then sixty years of age, and then a bishop of Caesarea for 23 years, directed him to employ skillful writers, and make fifty-two legible copies of the entire Scriptures, for the use of the churches in Constantinople, and doubtless other places.

That Eusebius was abundantly competent to do this work himself no one will call in question, especially when we remember that it is said of him that he transcribed most of the voluminous works of Origen with his own hand. You will recollect that he was educated at the colleges of Antioch and Caesarea, celebrated school centers of that day, and here, in his own native city, he was so much admired that he spent the last twenty-five years of his life as bishop of that diocese. And now some critical scholars, and Tischendorf among them, believe that one of those fifty-two copies of the Bible was the Codex found in the convent at Sinai, and perhaps the other two I have described were among the number. And, if so, it is probable that Eusebius, with his clerks, if he had any, went to Alexandria to make those copies. And furthermore it is quite probable that he made those copies from the autographs; the original writings as made by the Evangelists and Apostles themselves, the very documents, it may be, upon which the council at Carthage had rendered its final decision on the canon, and which decision corresponds so well with these MSS.

Thus it may be seen how closely the New Testament of to-day is connected with those books as they came from the hands of the authors. But it is possible that in some instances we have linked certain historical facts too closely together, and possibly have transposed some of

the links in the chain of events, yet the historical facts remain, and will ever be considered by every candid inquirer after truth, clear proof, that we have solid ground for the confidence that we have the New Testament substantially as it was given by the New Testament writers themselves.

But I would not leave the impression that our present English Bible is a translation from any one of those three early Greek Bibles exclusively, of which we have spoken. King James' revisors had before them only one MS., dating earlier than the tenth or twelfth century; that was the Codex of Beza of the sixth century, very incomplete, and having only the Gospels and the Acts. And the best critics of to-day do not rely upon it. They had a number of good cursive MSS., dating from the tenth century downward, and with these and various versions at their command, they were enabled to give the English-speaking people the best version they had ever received. The truth is that as yet no standard Greek text of the New Testament or Hebrew text of the Old Testament has been agreed upon by Biblical critics. I have spoken of the text used by Bagster for the Old Testament, and of the one used by the British and Foreign Bible Society, but no one has been officially declared as standard.

Perhaps one cause of this delay is the hope that in a not distant day the convents of the East, and other supposed treasure houses will be compelled to open their doors and surrender their ancient archives to the Christian scholars of to-day. But it must not be supposed that the Christian world is suffering for the lack of the information which those secret vaults are supposed to contain. All the MSS. discovered since King James' revision, although they have been most critically examined, reveal nothing disparaging or essentially contradictory to the writings as they now exist. And no critic expects or fears the discovery in the future of anything that will throw discredit upon the creditability of those books.

As we said before, all the modern discoveries, those remarkable slabs or monoliths, those valuable MSS. or those spurious Gospels or other writings, and the results of all archaeological explorations emphatically confirm the

New Testament record. And it may be very appropriately said that on these Oriental marbles, on these precious alabasters, on these variegated granites, which have witnessed the fall and decay of many empires and kingdoms, on these may yet be read with more or less completeness a monumental Bible.

Neither is there any danger to the credibility of the New Testament, or the whole Bible, arising from the large number of versions in which it has been rendered or may yet be rendered. Some have supposed that these versionists may in time get so far away from the original Greek in which they were at first written, that there may be a great loss of original significance and power and truth. And it is certain that no lasting or general corruption of the records either in versions or translations can ever take place so long as the present critical scholarship and fervent devotion in the Christian world shall continue, and these will increase rather than decrease.

And we trust we do not underestimate the value of all classes of evidence in proof of Christianity. But some prefer the experimental evidence, others the moral, and yet others the miraculous, and still others the prophetical evidence, and yet to me there is nothing so realistic, so unwavering, so eternal as the historical and documentary basis of Christianity. And in all our public efforts we have encouraged the people not to reach upward and feel after the floating particles in the religious and philosophical atmosphere; but to reach downward and lay hold on the foundational truths of a written Christianity. Of all the harbors of truth there is none so safe as this.

And of all the so-called sacred books in the world, there is none worthy to be held up by the side of the Holy Bible. To institute the comparison is like placing a star of the fiftieth magnitude by the side of the broad and brilliant sun at noon-day, or like in a dark night to compel a little wax taper to compete with a great search-light of a million candle-power.

And now we have presented all the points we can at this time. We have tried to condense and simplify and then focalize these facts on your mind and memory and soul,

so that neither your time nor mine shall have been spent in vain, for if there is anything that we almost hate, it is a blind belief, or a superstitious reverence for anything, no matter how sacred it may be. We could not be a devotee of anything that could not bear the light. Among the many banners that have been flung to the breeze in the march of progress, there is one especially under which we love to keep step to the inspiring music, and it bears this inscription, "Ye shall know the truth, and the truth shall make you free."

We have tried to show that the Christian's confidence is based upon a reasonable faith, and his faith is based upon the most substantial testimony, that the Bible is a divine book, compiled by men acting under a divine guidance, and it is difficult for us to comprehend the vast significance of this conclusion. To help us to see it, behold the awful significance of the negative of this proposition. If the Bible is not divine, no Christian enterprise, whether material, benevolent, or spiritual, can survive, for Christianity in all its compass and purpose, is then but a gigantic fraud upon humanity; it is a deception imposed on the credulity of mankind. But that it is none of these things we think that we have shown you; that its inspiration, its basis, the Word of God, was given to the world in the most reasonable way possible.

And we have not presented these points for the main purpose of checkmating the bold advances of infidels and skeptics, since there is not much of this in this day. If any of this kind of persons, however, have read what we have had to say, it is hoped that they will not only have more intelligent understanding of the basis of Christian faith, but will themselves be induced to fall in with the great trend of Christian thought and effort in this day.

And, finally, may we say that we hope to have added some impulse to the broad and intelligent Christian work of applied Christianity in this day by showing possibly the clear foundation and inspiration of it all as found in the broad, all-compassing Christian life of its Founder, who was the prophecy of the Old Testament and the fulfillment of the New.

We can remember when infidels reproached the Chris-

tian people for simply harboring a sentiment, however good it may be, and yet neglecting, or largely limiting, the benevolent work which can be the only visible proof of the existence of that sentiment. But the broader church work of to-day in which, in all of our large cities especially, there is not only such vast and emphatic need, but there is also such a grand beginning, and in which we trust you are ardently engaged; this kind of work is not only putting to silence such objections, but is attracting the cordial co-operation of this class of society as well as the most progressive elements of all other classes.

CHAPTER IV.

COSMOGONY, SCIENCE AND REVELATION

Science is knowledge. It is neither the knowable nor the unknowable, but the known, and it may be either truth or fact. Investigation and even speculation may be necessarily prevenient to, but neither one is science. Science is a result and not a process, and the more clearly it is freed from conjecture and hypothesis, or the more fully it comes within the grasp of the understanding, or the circle of the comprehension the more worthy it is of the designation as science. Before science is obtained there are often many revisions and transpositions, and sometimes fatal disasters.

The adventurer is the Columbus, experimentation is the uncertain voyage, doubts are the threatening mutiny of the sailors, but science is the new world discovered. Much of that which is now current as science is not genuine, it is nothing but alloy, or at most, it has not the legal admixture of truth and fact. It is like the explorer at the base of a mountain, ambitious it is true, but standing confused, bewildered, amid the complex winding paths that lead to its summit, but science is the explorer standing upon its sun-crowned summit, shouting *video, scio,* I see, I know.

Skeptical scientists complain that theologians so often change their interpretation of the Bible, and so they have done, and doubtless will continue to do as the light shall continue to increase, for while the Bible is at once and invariably true, their exegesis may now and then vary and occasionally be false, as no one claims interpretation

to be infallible, and this admission does in no way essentially depreciate the word of God as a revelation from heaven. But, on the other hand, scientists have varied as well in their interpretations of nature, and have published unnumbered theories as true, and have afterwards abandoned them as false, but this does not make nature untrue. Men have differed in the interpretation of the Bible, but that fact does not render the inspired volume unworthy of credence. Men have differed in the interpretation of nature; and we do not, therefore, say that nature is contradictory, and hence false. It will be time enough for skeptical scientists to make this grave charge when they have sheathed their Damascus blades and ceased their conflict among themselves, and we need not fear much until they are better harmonized among themselves, indeed we may calmly sit still in the citadel of Revealed Truth and fear little or nothing as we look out and behold them coming to storm it, so long as we see the crossing of swords among the foe.

Speaking of the Positive philosophy of Comte, Prof. Huxley says: "I find therein little or nothing of any scientific value and a great deal which is as thoroughly antagonistic to the very essence of science as anything in ultramontane Catholicism." So the contest has gone on; one class of scientists charging the other with being unscientific, and whenever in their teachings, bearing dangerously upon any important principle of Christianity, they present anything near unanimity of opinion even and much more so of invariable conclusions, we should then meet them as worthy antagonists. But let us not waste our strength upon an irresponsible and scattered enemy, as many of these professed scientists are unworthy of our steel, and the only way of successful warfare with them is to occasionally, at long range, drop a shell into their camp, as regular and honorable warfare they do not appreciate. But strictly speaking, there is no conflict between Nature and Revelation, but it must be confessed that there has been great want of harmony between the interpretations of the one and the interpretations of the other. One or both of these interpretations may be erroneous and hence there will be conflict, but be-

tween a correct interpretation of the Bible and a correct interpretation of nature as we see it, there can be no inharmony. We most positively, therefore, reject from our usage the expression, "true science," as being tautological, and as an effort to make a distinction where there is no dfference, for all science is true, and all departments of thought and inquiry that fail to come up to this definition at most attain only to a probability or possibility, and many even fall so low as to only entitle them to vain speculation. Hence what the Bible, fairly considered, positively and repeatedly declares to be true should not be pronounced as certainly false, by simply a conjecture of scientific men, as the increasing mass of evidence in favor of the credibility of the Bible is so clear and convincing that it should not be set aside by the ever varying theories of speculative minds.

In 1302, at Courtria, France, a famous battle occurred between the knights and citizens of a small Flemish town, and as the knights rushed forward with loose bridles they fell one after another into an enormous ditch which lay between them and their enemies, and when they came to gather up the spoils of the awful slaughter they found 4,000 golden spurs which indicated the extent and nature of the awful engagement. So now I see the modern gallant knights of skepticism with loose rein dashing on towards the apparently defenceless citizens of the Zion of God, but now I see them one after another, horse and rider, plunge into the awful chasm of defeat and all that will be left will be a few golden spurs with which they pricked their own sides with a vaulting ambition. And after all the storming of the ages the foundations of the city of God standeth sure.

Cosmogony

Cosmogony is that science which treats of the origin of the world in particular, and of matter in general. Upon this subject the Bible speaks clearly and emphatically, and the very opening chapter of the inspired volume gives out no uncertain statement. In no florescent but in unpoetic and didactic style it ascribes the

creation and formation of matter to Divine power and the Scriptures unvaryingly teach that it was God who created the world. The heathen writers on cosmogony may be divided into two classes; first, those who believed the world eternal in form as well as in substance, but this theory, however, was not clearly taught by many, but the belief was that the matter of the earth was eternal but not its form, but upon this subject they were more or less confused. The Greek poets, the Phoenicians and Babylonians all speak of chaos as the original condition of all matter, out of which came all the varied forms of the universe. So much harmonizes well with Revelation. The oldest of the Greek poets, Hesiod, speaks of the arrangement or separation of this chaos by a Divine Power working in conjunction with the laws of nature when he says:

> "Nothing preserved its form,
> Each thing opposed the rest, since in one frame
> The cold with hot things fought, the moist with dry,
> The soft with hard, the light with heavy things.
> This strife the God and kindly nature quelled,
> By clearing sky from land and land from sea,
> And parting liquid sky from thicker air."

The entire paragraph seems a good paraphrase of the first verses of Genesis, and while they thus accounted for the reduction of this chaos to order, how did they account for the existence of the chaos? The most enlightened of them taught that co-existent with eternal matter was an eternal spirit, and Aristotle taught that this spirit was "the cause of the universe, its motion and its form." It was a well known maxim of Plato that mind was prior to matter, and with here and there a single exception, as Justin Martyr for instance, the entire Christian world has steadily held fast to the doctrine of the Divine creation of matter. Now, does science teach the eternity of matter? In other words, is it scientifically known that matter is eternal? I know that we have often been sagely reminded of the Latin saying, *"ex nihilo nihil fit,"* from nothing, nothing can be made, creation of something out of nothing is absurd. But is the apparent absurdity an undoubted proof that it may not be true nevertheless?

What thoughtful person would venture far upon such a course of reasoning? It may be simply absurd because we cannot at present understand it.

But to say that matter is eternal does not explain the difficulty; it only shifts the specter to another point on our mental horizon. To us it is yet incomprehensible. To say that matter is eternal, without beginning, is contrary to all analogy of material things themselves, and contradicts that almost universal sentiment of humanity which is, "everything has a beginning."

Dr. Buchner, from Germany, a few years ago paid a lecturing visit to the United States, but that visit created nothing more than a local enthusiasm, if indeed that much. The people of this country do not wish to listen to such blank Atheism. Dr. Whedon pronounced him "the Atheist of Europe." He has published a book entitled, "Force and Matter," in which he speaks of the infinity and immortal nature of matter. Neither from astronomy, nor geology, nor from zoology does he even infer a Creator. And let it be remembered that while this is his dark and cheerless teaching, it is not the teaching of science. And while science does not clearly teach the creation of matter by a Divine Being, it strongly confirms the Bible doctrine that it had a beginning, and hence must have been created, and God only can create. Astronomy and zoology and geology all point with more or less certainty to the objects coming within their view as having at least a probable age, and if they have had age they have had time, and if they have had time they are not eternal. And especially in geology everything points back to the beginning, not to a series of beginnings only, but to one primal beginning. It is a settled principle in science that man, animals, plants and inorganic matter were not co-existent in their beginnings, and all of these grand beginnings point with more than the certainty of the magnetic needle away back to that grandest of all beginnings in which God created the heaven and the earth.

But some have sought for points of parallelism between the Mosaic account and the Babylonian epic of creation, with a view of casting discredit upon the former as an original revelation. But there are parallels also in the

cosmogonies of Egypt, Persia and India, and did Moses therefore borrow from these sources also? This would make Moses one of the most omniverous scholars and eclecticians known to ancient history.There are but two great thoughts in the Mosaic account, that of God and creation, and the account seems sincere and simple as compared with the Babylon epic. The latter is extravagant and mythological in an eminent degree. The account of the first men is hideous; men with two wings, some with four wings and two faces, with one body but two heads; men with goat's feet and horns, etc. We are not ready to give up Genesis as an original document.

Origin of the Universe

The universe includes what is known as the heavenly bodies, the sun, the moon, the planets, the stars, the nebulae and the comets. As to the origin of the heavenly bodies that brings up the question as to the origin of matter itself. This question does not belong exclusively to astronomy, but to all physical science as well. We do not here, therefore, discuss the question itself as to the origin of matter. We will simply give an account of the origin of the universe as it now appears. The commonly accepted theory is called the Nebular Hypothesis. This theory was first suggested by Swedenborg, and then by Kant, and afterwards by others and finally worked out into a system by La Place. The universal principles upon which this theory is based or rather lying back of it may be noted as follows:

First, The orbits of the planets are nearly circular.

Second, They are all nearly in one plane.

Third, The revolution of these planets without exception is in the same direction.

Fourth, There is a regular progression of distances to which there is only one exception and that is Neptune.

Fifth, The plane of the planet's rotation nearly coincides with the plane of its orbit, the only exception being that of Uranus.

Sixth, The direction of rotation is the same as that of its orbital motion, excepting, perhaps, Uranus and Neptune.

Seventh, The plane of the orbital revolution of the planet's satellites coincides nearly with that of the planet's rotation.

Eighth, The direction of the satellite's revolution coincides with that of the planet's rotation.

Ninth, The largest planets rotate the most swiftly.

This wonderful system and the complete harmony in this arrangement of the universe indicates to the minds of some people that it was made so by the Creator, but as everything in nature shows growth and development it seems more likely that the science of astronomy harmonizes with this general law rather than that it should contradict it. The nebular theory is therefore a theory of evolution or development. The principles upon which it was first supposed to be founded as taught by LaPlace may be mentioned as follows:

First, That at sometime in the past the matter which is now embraced in the universe was in the form of nebulae.

Second, This nebulae was a mist of intensely heated gas.

Third, Under the action of its own gravitation the nebulae in its own rotation assumed a globular form.

Fourth, In consequence of the rotation, the globe would naturally become flattened at the poles, and as the contraction would go on by reason of cooling, the centrifugal force at the equator would become equal to gravity and finally throw off rings of nebulous matter somewhat like the rings of Saturn.

Fifth, The rings thus formed would for a time revolve around the planet, but ultimately break up into fragments forming a globe or globes revolving around the first as a planet.

Sixth, The planet thus formed might throw off rings of its own and so form satellites which might revolve around the planet itself.

This is a brief outline of the theory.

There are many serious objections urged against it. It is, however, supposed that it explains most of the principles and facts connected with the origin of the universe. That it is susceptible of great modification we most sincerely believe.

Another theory for the origin of the universe has been advocated by Prof. L. Lockyer, and it is called the Meteoric Theory. In brief it is that all the heavenly bodies in their present state are mere clouds of meteors or have been formed by the aggregation of such clouds. Prof. Lockyer claims to have discovered by the use of the spectroscope evidence sufficiently clear upon which to base his theory.

These two theories, however, are based upon arguments which refer to the great past. There are other theories more modern than these upon which are based principles of reasoning forwards; that is, by supposing what will finally be the result in the universe. For instance, it is generally accepted that the earth was once much hotter than it is now, that it is gradually cooling; also that the moon was formerly an intensely heated body but now seems to be entirely chilled. It seems quite evident that the most distant planets as Saturn, Uranus and Neptune have not cooled off to anything like the degree that the earth has. As to the sun it is a question as to what is its real constiuency. If it is gradually shrinking at the rate of two hundred and fifty feet a year in diameter as the result of the output of light and heat, it must at last be exhausted, unless there is an inexhaustible supply coming into it. If, however, the sun is a solid magnetic body, as some believe, revolving like a huge dynamo and developing in its photosphere the light and heat which we observe, then possibly it may last forever as the source of electricity seems to be inexhaustible. One thing, however, seems sure, and that is that our system did not always exist, or, in other words, that

it had a beginning, but when that beginning was is a question about which science itself does not seem to be much concerned. As to how long this system shall last is a question in which science seems to take more interest, for there is evidence of wearing out and cooling off, and even the death of some planets is noted, as the moon, for instance, hence it is probable at least that this may be the fate of all the solar system in the great future. At that time life on the earth as we now know it could not exist as the earth would become a cold, dark, frozen globe. That there will come a time when there shall be a new heavens and a new earth, literally as is indicated in the Sacred Writings, no one perhaps is authorized to say. So much, then, may be said in reference to the origin of the universe and as to its destiny.

CHAPTER V.

ASTROLOGY AND ASTRONOMY

Astrology professes to foretell and explain the events of human life, by the position, aspects and influence of the stars and planets.

It is supposed to have originated with the Chaldeans. After the Babylonian captivity some of the Jews were believers in it and it has prevailed to some extent among all the nations of Europe. In ancient Rome during the Empire, astrologers were a numerous and influential class.

In the Middle Ages, when astronomy proper began, it was then studied as subsidiary to astrology, and they stand related to each other like alchemy and chemistry. It was not until the time of Copernicus, that astronomy really gained an ascendency over astrology and from that time astrology has been discredited by most scientific men.

It is but natural that astrology should have been popular. The evident influence of the sun, affecting fertility, growth and health, connected with the worship of the planets as divinities, besides the notion of Aristotle and others, that these heavenly bodies had souls and moved on in their orbits not by a mere force or law, but by their own conscious volition, all combined to popularize astrology. Out of these ensouled spheres they supposed flowed wonderful influences, affecting the life and destiny of men.

These indications and influences were supposed to be shown in the relative positions of the sun, stars and planets, especially at the time of birth, and these followed them through life.

To facilitate these observations, they divided the heavens into twelve equal parts, which they called the houses. The first house was called the house of life, the second of riches, the third of brothers, the fourth of parents, the fifth of children, the sixth of health, the seventh of marriage, the eighth of death, the ninth of religion, the tenth of dignities, the eleventh of friends and the twelfth of enemies. Each one of these houses had one of the heavenly bodies as its special lord. The first house or sign began at the vernal equinox, and they counted from the west to the east. So it was the prevailing belief of those early times that the stars ruled the destinies of man. The Roman Emperor, Tiberius, practiced astrology; and Hippocrates, the Father of Medicine (B. C. 470), placed this among the most important branches of knowledge for a physician. Astrology had also a peculiar fascination for the Arabians. And the Moors in Seville, Spain, erected the first observatory in Europe in 1196, and they determined fortune and destiny by drawing up a Horoscope, which gave the position of the sun, moon and planets at the birth of the individual or at the beginning of the enterprise, and it was a complete and complicated system. If Venus was our star this foretold love; if Mars, then war; if the Pleiades then look out for a storm at sea.

It was not the ignorant alone who believed in this superstition, but many of the wisest of those times, as Lord Bacon, for instance. Kepler published a book in 1602 on planetary influence. And as late as Charles II., Lilly, an astrologer, was called before the House of Commons to give his professional opinion as an astrologer, of some enterprise under consideration. Indeed there are some in modern times, who seem to believe in astrology, to some extent at least. We still talk of the star of Empire, the star of destiny, etc., but "the fault, dear Brutus, is not in our stars, but in ourselves that we are underlings."

Astronomy

Astronomy naturally followed astrology; indeed we may say that astronomy is astrology perfected and freed from its superstitions. In their history they have never

been found separated, are not so entirely now, as we still talk of lunacy and other forms of disease more or less affected by the sun or moon; and also the right time of the moon to plant and sow and build and cut your hair and pare your nails, etc. But astrology reached its climax during the Middle Ages, and from that time on it receded and astronomy came into view.

The Chinese boast of the antiquity of their astronomical records, and perhaps their boast has a good foundation. They claim to have a record of the conjunction of four planets and the moon, which occurred in the twenty-fifth century B. C. They give the first account of an eclipse of the sun, which occurred 2122 B. C. And it is said that one of the emperors put to death two of his chief astronomers, Ho and Hi, for failing to announce the eclipse of the sun, which occurred 2169 B. C.

The Chaldean shepherds and priests were astronomers and even the temples were used as observatories. Babylon and Nineveh were great astronomical centers. In the ruins of the latter have been found records which archaeologists think date back as far as 2540 B. C. When Alexander captured Babylon, he found a good library, a part of which was on astronomy, dating back nineteen centuries.

It is to Greece, however, we must look for classified astronomy, and to Thales (B. C. 640)., one of its seven sages, as the Father of Astronomy. He taught in opposition to many of the Asiatics, the rotundity of the earth; that the moon derived her light from the sun; he determined the equinoxes and the solstices, and predicted an eclipse of the sun, which when it came, so frightened the Medes and Lydians, then engaged in war, that they threw down their arms and instantly made peace.

The sun dial was invented by Anaximander (B. C. 610); and he also explained the cause of the moon's phases. Pythagoras (B. C. 570) founded a school at Crotona, Italy, where he had hundreds of enthusiastic astronomical pupils, but his school seems not to have had much permanent influence. He had in the main correct ideas, but lacked proof of his positions. He believed that the planets were placed at intervals in their spheres from the

sun corresponding to the scale in music, and he was really the first to speak of the "music of the spheres," which music, however, was too fine for our ears, and could only be heard by the gods. He believed the planets inhabited and attempted to calculate the size of the animals in the moon. Anaxagoras (B. C. 500) rejected sun-worship, believing that there was one true God and that the sun was a globe of fire. Rejecting chance, he attempted to explain eclipses and all celestial phenomena, by natural causes, and because of his opinions, he and his family were doomed to perpetual banishment.

Eudoxus (B. C. 400) taught that the heavenly bodies are set like gems in hollow crystal spheres, so pure that we can look through them as transparent bodies, but that the planets are placed in one globe and that a subordinate deity resides in each one, ruling and controlling it, much as Aristotle taught. Eudoxus then is the author of the idea of the Crystal Spheres, so popular with the poets.

Hipparchus (B. C. 200) was the most celebrated of the Greek astronomers and has been called the Newton of antiquity. He calculated the precession of the equinoxes, and discovered the length of the solar year to within six minutes, and made the first catalogue of the stars numbering 1080. The later Grecian astronomers and philosophers before aspiring to the rank of teacher, traveled some of them for years, through Chaldea and Egypt, studying in the great schools of those countries.

Pythagoras is reported to have spent thirty years in this manner.

Two hundred years after Pythagoras, or about 275 B. C., the great school at Alexandria was established. It was patronized by wealthy kings and was considered the center of the arts and sciences of those days. Here Ptolemy, a Grecian by birth (A. D. 70), wrote his Almagest which, for fourteen centuries, was the text book for astronomers. In this work was contained the famous Ptolemaic System, founded largely on the discoveries of Hipparchus and Erastosthenes, who had computed the size of the earth by the measurement of an arc of the meridian. In a word, it was a theory of "Cycles and

Epicycles," viz., that the earth was a fixed center, around which the Sun and all the planets revolved in circular orbits. And by a system of bars which held them to the earth and a system of cranks which moved them on their axes, they were kept flying around the earth. The system at last became so complex with bars and cranks that a celebrated patron of astronomy, Alfonso, of Castile, Spain, exclaimed, "If I had been consulted at the Creation, I could have done the thing better than that."

After the destruction of the Alexandrian Library in 642 A. D., Bagdad on the Tigris, and Cordova in Spain, became great centers of science, literature and art. Pope Sylvester II. learned the elements of astronomy at Cordova, then the capital of Spain. But with the downfall of the Moors (1492), who were chiefly Arabians and hence Mohammedans, and what is known as the Revival of Learning in Europe, art, science and literature, declined in Spain and we must hereafter look to other centers for scientific knowledge.

We are to look next at Nicolas Copernicus, a Polander, born of German parents, at Thorn, Poland, February 19, 1473. He was educated at the University of Cracow, then the capital of Poland. He taught cautiously, for fear of the persecution of the church, the diurual and annual motion of the earth. He chose in proof of planetary motion, how objects seem to flit by us, when we are in motion. For forty years he conducted his observations in the upper room of an humble farm house, through the roof of which he had an unobstructed view of the sky. The first copy of his work, entitled "Concerning the Revolution of the Celestial Orbs," came from the press just in time to be laid upon his death bed, June 11, 1543. And although he dedicated his work to the Pope, yet he and the whole church and astronomers generally, condemned his conclusions, so firmly and universally had the Ptolemaic system been established. His theory was only a modification of the Ptolemaic system, as he accepted the cycles and epicycles, contending, however, that the earth and all the planets moved around the sun.

Tycho Brahe, a celebrated Danish astronomer, was born 1546 at Knudstrup, Denmark. King Frederick II

gave him the island of Huena, where he erected the finest observatory then in Europe. He was educated in the universities of Copenhagen and Leipsic. He rejected the theory of cycles, but contended that all the heavenly bodies revolved about the earth in circles. He catalogued 777 stars and made a number of astronomical instruments. After much persecution he returned to Germany in 1579, and finally died in Prague, October 13, 1601.

John Kepler, born at Magstatt, near Weil, Wurtemburg, December 27, 1571, became a pupil or rather assistant of Brahe at Benach, near Prague, in September, 1601, only a month before the death of Brahe. He very naturally succeeded the venerable astronomer in his important work. His early life was full of what are called misfortunes. His mother, the daughter of an innkeeper, could not read or write. His father was a soldier and enlisting in a war against the Turks, was never heard of again. His mother proving to be severe, he went to live with his sister who had married a minister, and showing aptness for learning was sent to the University at Tubingen to prepare for the ministry, where he took his degree in 1591 at the age of 20. His thesis on that occasion being of a too liberal turn for the faculty of that institution, he at once abandoned thoughts of the ministry, and devoted himself to the study of the astronomical theories of Copernicus.

He was soon appointed professor of mathematics at the University of Gratz. Kepler's life was full of storm. At advanced life his mother was on trial for five years for being a witch, and was at last only saved from the flames by the personal appeal of this son to the grand duke. He was appointed royal astronomer at the University of Linz in 1613, and here the priests denounced him as a heretic because he opposed the Ptolemaic theory and was also denounced as the son of a witch. But during all these trials he finally worked out what are known as the famous Kepler laws of planetary motion. In 1629 he moved to Sagan in Silesia and became professor in Rostock University, but finally died in Ratisbon, November

15, 1630. He had published 33 volumes and left in MS. 22 volumes more, the most of which have since been published.

In his work announcing his three laws he says, "the book may well wait a century for a reader, since God has waited 6000 years for an observer."

In connection with his acceptance of astrology, Kepler also accepted the Pythagorean theory of the Music of the Spheres. He made Saturn and Jupiter take the bass, Mars the tenor, Earth and Venus second or alto, and Mercury the soprano.

Galileo was born at Pisa, February 14, 1564, being seven years younger than Kepler. Unlike Kepler, he had much in earlier life to encourage him. He was at first a believer in the Ptolemaic system. It was while he was professor at the University of Pisa, where he had made so many experiments in physics, he changed his mind and adopted the Copernican theory. He soon after learned that a Dutch watchmaker, by the name of Jansen, had invented a contrivance for making distant objects appear near. He readily caught the idea and soon had a rude telescope constructed out of a lead pipe with a lens at each end. It was the revelation of this telescope which brought upon his head the cruel storm of persecution.

It should be remembered that not only Catholics, but Luther and Melanchthon as well, wrote against the Copernican theory, as being contrary to the Bible. Galileo had to flee from Pisa, but was kindly received at Padua. He was on friendly terms with the Pope, Urban VIII, but by the influence of enemies he was twice summoned to Rome to answer the charge of being a heretic. Twice he responded and the last time the Pope turned him over to the Sacred College to do as they thought best. There in secret, June 22, 1633, in his seventieth year, on his knees, clad only in a shirt of black sack-cloth and under the torture of the cruel rack, as I believe, as the vacancy in the Roman Church records in this place is proof, he was forced to abjure his faith in the annual revolution of the earth, yet in a suppressed whisper, perhaps the result of physical exhaustion, he says, "Still, it does move."

He was then sentenced to imprisonment at the will of the Pope, but who allowed him to retire to his little town, Arcetri, on the Florentine hills, where he continued his studies, but he soon lost his sight, perhaps the result of his torture. He died January 9, 1642, aged 78, the year of the birth of Isaac Newton.

Isaac Newton was born in Woolstrop, Lincolnshire, England, December 25th, 1642. His early genius for mechanics was soon manifest in the making of many curious toys. It was in the summer of 1666, when he was 24 years of age, when he had returned to his home because of the prevalence of the plague in Cambridge, that he is supposed to have observed the falling apple, which led to the study of gravity and finally to the law of universal gravitation, as it will be remembered that Galileo had already developed the laws of falling bodies. His discoveries are too numerous and important to be mentioned so briefly here. He died in London, March 20, 1727, and was buried in Westminster Abbey.

From the time of Newton until the present there has been nothing essentially new discovered in astronomy. A number of planets and comets have been discovered, but these are all found to conform to the general laws already known. Many eminent astronomers have recently appeared both in Europe and America, and the greatest advances have been in instrumental appliances, particularly in telescopes and photography.

It is in the science of Astronomy that skeptical philosophers have supposed they have found the more numerous and irreconcilable contradictions to the great truths of Christianity, and herein they have indulged in the most unbecoming self-gratulations, and herein also they have considered themselves triumphant. From their self-poised pedestals they have looked down upon the supposed imbecility of Bible language, and many Christians have grown nervous under their assumed intelligent gaze. In their oracular manner they tell us that the Bible speaks of the earth at one time as an immense disc supported by huge pillars, and these planted upon immovable foundations. At another time it speaks as if there were a vast subterranean ocean. Now, it is said, that these and like

statements are unscientific and contrary to the modern discoveries in astronomy and geography. And while not claiming scientific accuracy in the Biblical language used, yet it should be mentioned that the Hebrew ideal was far in advance of the contemporaneous and philosophical teaching of the heathen world. They were far from unanimity in theory upon the shape of the earth. They sometimes spoke of it as an oblong square or parallelogram; at others as a cube; at others still as a pyramid. Now it will be very readily noticed that these descriptions are ludicrous in the extreme, and have not even the support of the appearance of things. And it will be as readily observed that the Biblical description is of that lofty poetic and sublime kind, and while lacking in accuracy of scientific verbiage, it is at least supported by natural phenomena. Thus the Bible, while not a scientific work, according to philosophical technics, is seen to be in advance of the science of the day in which it was written. And had it been written in such scientific language as to meet the requirements of modern scientists, it would not only have been foreign to the great design of a revelation, but more, it would have been unintelligible to the people for thousands of years. And had Revelation paused to explain these things to the comprehension of the people, it would have been liable not only to universal rejection by the people, but it would have been largely a text book in natural science instead of a guide book to eternal life. It is best, then, as it is, since in its language on science it could not thus, at the same time, be adapted to ancient and modern times. Who, then, would fault the Bible as you might fault a strictly scientific work when only, incidentally speaking of nature, it speaks in the language of the people and according to natural phenomena?

Again from Bible language it is said we would infer that the earth is a geocentric and stationary center, around which all the astronomical heaven revolves. That the earth is stationary, and that all the sidereal heavens revolve around the earth was the uniform belief of antiquity and was formed into a system of supposed concentric circles by the Ptolemies, and this remained the

scientific belief until the time of Copernicus during the Reformation in Germany. As Protestants we may have been too severe in our criticisms on the Roman Church, for so zealously clinging to the Ptolemaic theory and forcing the recantation of Gallileo. Whatever may be said of the treatment of Gallileo, we must not forget that Melanchthon, the Reformer, and friend of Luther, repudiated the Copernican theory as much as did the Romanists, and even down to a late day two eminent Protestant Professors of theology have published quite extensive works founded, as they say, upon reason and Scripture, to prove that the earth is stationary, and that all other of the heavenly bodies revolve around it. Of course these two men, Francis Turretin and Dr. Frans, are in great error, as well as were the Catholics and Melanchthon. Now it is susceptible of clearest proof that the Bible, so far as it refers at all to this matter, was in many important respects in advance of the astronomical teaching of the times in which the different books were written. It is a known matter that astrology is the parent or ancestor of astronomy, and astrology taught the connection of human weal or woe with certain relations or motions, or appearances of the stars, and it taught the people to worship the stars. The Bible very early interdicted these things, as may be seen by reference to Deuteronomy. It is true that it teaches a high and holy contemplation of the heavens as the handiwork of God, but it never teaches their adoration and worship. In this, as in the former case, it speaks of things as they appeared to men. It speaks of the sun setting, and so do we at this day. And why do we continue this unscientific mode of speech? Is it not misleading to the uninstructed and the young? Must they not be set aright after awhile? And why do our scientific men continue to furnish these misleading phrases for our almanacs to go into every family? How could, or would they remedy the evil, if evil it be? Suppose one should determine to do so. In the place of the words, "Sun rises" at such a time, we read, "November 2nd, the earth in its annual motion in its orbit around the sun, which also has its annual motion in its own orbit, will have ar-

rived at such a point as that by its diurnal motion the sun will become visible to the inhabitants of Pittsburgh at 6 o'clock and 30 minutes, if the weather isn't cloudy! How strange that sounds beside the simple phrases, the sun rises and the sun sets.

The Sun

There is no more important object in the heavens than the sun. It has been so regarded by all nations. It has been so highly revered as to be worshiped by some tribes and nations. It is therefore no wonder that it has been most closely watched in its influence and power upon the earth. It has not only been thus carefully observed by the ancients, but it is an object of the most critical observation by astronomers of this age. One of the most marvelous things is its distance from the earth. It is easy to say that its distance is about 93,000,000 miles, but it is not possible for the human mind to grasp the meaning of these figures. The distance is beyond all computation by actual measurement. A great many comparisons have been instituted, but all of them fail to give us anything like a fair understanding of this immense number. If there were air to convey the sound from the sun to the earth it would require over fourteen years for it to reach us. An express train traveling day and night, at the rate of thirty miles an hour, would require 352 years to reach the sun. Ten generations would be born and would die, the young men would become gray haired and their great grandchildren would forget the story of the beginning of that wonderful journey and the eleventh generation would see the end of the journey. If a babe were born with an arm long enough to reach the sun, the infant would grow to manhood and to old age and finally die, before the sensation could reach the brain, after having touched the sun with the tip of its finger. Of course it is not possible for us to make anything like a reasonable estimate of this distance, and this distance is not certain, although it is certain that it cannot be any less than what we have stated, and it may be much farther off.

The light of the sun is equal to 500,563 wax candles held at a distance of one foot from the eye. It would require 600,000 full moons to produce a day as brilliant as one of cloudless sunshine. The amount of heat which is imparted from the sun annually would melt a layer of ice 110 feet thick, covering the whole earth. Some have made estimates which have run as high as 180 feet. It should be remembered also that this light and heat stream off in all directions from this orb and that only about 123 hundred millionth part reaches the earth. One can see then how vast must be this source of heat and light. To produce this amount of heat by the burning of coal, for instance, it would require a layer 16 feet in thickness, extending over the whole globe, to feed the flame a single hour. Were the sun then a solid body of coal it would burn up at this rate in 46 centuries. Sir John Herschell said that if a solid cylinder of ice 45 miles in diameter and 200,000 miles long were plunged end first into the sun, it would melt in a second of time. The sun appears to be a little over half a degree in diameter. It seems a trifle larger to us in the winter than in the summer, and it is at this time three million miles nearer the earth. Its diameter is about 866,000 miles. Some of the ancients made guesses at least as to the size and distance of the sun. Pythagoras estimated the sun's diameter at 75 miles, and its distance 44,000 miles. Its volume is 8,300,000 times that of the earth. Its mass is 750 times that of all the planets and satillites of the solar system, and is 330,000 times that of the earth. The density of the sun is only about one-fourth that of the earth, or one and four-tenths that of water, so that the weight of a body transferred from the earth to the sun would not be increased to the proportion of the comparative size of the two. However, a man weighing at the earth's equator 150 pounds, at the sun's equator would weigh about two tons. At the earth's equator a stone falls 16 feet the first second, at the sun's equator it would fall 444 feet.

The Sun Spots

As early as 1607 A. D., these spots were observed, although the telescope was not invented until 1610. The number of these spots greatly vary. They are not really spots on the sun, but are mere openings on the luminous sphere which surrounds the sun, allowing us to look in upon the dark body of the sun. As many as two hundred of these spots have been noticed at one time, and they are mostly observed near the sun's equator. Some of them are of immense size, perhaps from 30 to 50 miles in diameter. Some of these estimates have run up to twice this number. They consist of all shapes and appearances, and seem to have no settled measurements whatever.

When these spots have been most numerous magnetic disturbances or storms on the earth have been most numerous. There was this coincidence, at the Aurora Borealis, in 1859 and 1883. It has long been supposed that the temperature and consequently the fruitfulness of the earth have been effected by the appearance of these spots. I believe it was Herschell who first advanced the idea that a year of plentiful spots would be a year of plentiful harvest, this, however, is not accepted by astronomers generally. It would seem rather that the temperature of the earth would be lower whenever the spots should be most numerous. It seems most evident that no heat will come from these spots to the earth. As to the actual constitution of the sun there are many theories. That it is a fiery mass is not now generally believed. Perhaps the most recent opinion is that the sun is a dark solid body, and that it is surrounded by a sphere of light and heat, and that this light and heat are evolved perhaps by the reflection of the sun, much as light and heat are evolved by the revolutions of a dynamo. It has now come to be generally accepted that the sun is the source of all electrical power. The first sphere surrounding the sun is a continuous cloudy covering possessing all the reflecting power, the second is called the photosphere, and it consists of a highly luminous gas, and is really the source of light and heat which we receive. As to the continuance of the sun there are differences of opinion.

Some have stated that the solar heat is gradually being extinguished from the fact that the sun is constantly shrinking in size. One astronomer estimated that in 5,000,000 years the sun will have shrunk to half its present size, and at this rate it cannot sustain life on the earth more than 10,000,000 years longer. Others contend that as a vast furnace, it is constantly fed by the vast volume of gases surrounding it. How can any one think of its majesty, power and utility without thinking of David, who said, "The Lord God is a sun and shield"; or of Christ who said, "Then shall the righteous shine as the sun."

The Planets

The name planet signifies a wanderer because it never seems to be stationary in the heavens like the fixed stars. The planets are never put down upon the charts of the heavens because they are never found in the same place, and they are not reckoned in the constellations. They have always been observed with intense interest. There are some features about the planets, however, that is characteristic of them all.

First: They all move in the same direction around the sun, and their motion is contrary to the movements of the hands of a watch.

Second: They move in orbits which are nearly circular.

Third: These orbits are more or less inclined to the ecliptic and intersected at two points called the nodes.

Fourth: They are opaque bodies and shine by the light from the sun. They rotate upon their axes in the same way as the earth, hence they all have the alternation of day and night. They move faster in their orbits when nearest the sun. These planets are divided into two general classes, with reference to the orbit of the earth. All of those moving within the orbit of the earth are called inferior planets and all those moving in orbits outside of the earth are called superior planets. When any two of these planets are in a line with the sun

they are in conjunction. Whenever it is below the sun it is in inferior conjunction, and when it is above the sun or beyond it is said to be in superior conjunction. The comparative size of the planets as well as their distance may be represented as follows: Place a globe two feet in diameter on a level surface, this will represent the sun. Next to it coming out from the sun will be Vulcan, a planet about which not very much is known. Its size may be represented by a small pin head and a distance of 27 feet from the center of the sun. Next Mercury may be represented by a mustard seed at a distance of 82 feet; Venus by a pea, distance 142 feet. The Earth also by a pea, distance 215 feet; Mars by a small grain of pepper, distance 327 feet. The minor planets, or asteroids, as they are sometimes called may be represented by grains of sand at distances varying from 500 to 600 feet. Next a moderate sized orange may represent Jupiter, distance one-fourth of a mile. A smaller orange will represent Saturn, distance two-fifths of a mile. A full sized cherry may represent Uranus three-fourths of a mile distance, and lastly a plum to represent Neptune one and one-fourth miles. To represent the motion of these planets in their orbits we may indicate as follows: The distance moved in each day along its orbit would be Vulcan, four and two-third feet; the Earth one and seven-eighth feet; Mercury, three feet; Venus, two feet; Mars, one and one-half feet; Jupiter, ten and one-half inches; Saturn, seven and one-half inches; Uranus, five inches, and Neptune four inches. As to their density some of them may be represented as follows: The Earth, Venus and Mars are near the same, that is, about five times the density of water. Mercury would be represented by a gold ball; Jupiter, by the density of lignum-vitae; Uranus and Neptune a lighter kind of wood, and Saturn would be represented by cork. A more interesting account concerning the planets as they are, is possibly desired. Thus the question which very naturally arises and has been the subject of much speculation in all ages, the answer to which, however, can only be obtained in a general way may be said what could be the object of the creation of all these planets unless they were in-

tended to be the abodes of live beings existing perhaps in a somewhat different form from human beings as we now know them. It is quite certain that these planets differ in the amount of light and heat which they receive from the sun, and as we have seen greatly differ in their density and hence if inhabited the character of the beings living upon them must correspond to the nature of the place in which they live. It is well understood that the planets differ in light and heat from seven times our usual temperature to less than one one-thousandth; second in the force of gravity from two and one-half times that of our Earth to less than one-half; third in the constitution of the planets, they differ in the density from one-fifth heavier from that of the Earth to nearly that of cork.

It seems to me well nigh impossible to explore the heavens without saying of them as David did: "Thy heavens and the work of thy fingers, the moon and the stars which thou hast ordained."

All devout astronomers will adopt the following statement by Prof. Steele: "A feeling of awe and reverence, of softened melancholy mingled with a thought of God, comes over us and awakens the better nature within us." And so Mitchel closed his work on astronomy by saying, "It carries us back to that grand epoch when in the beginning God created the heaven and the earth."

CHAPTER VI.

GEOLOGY AND EARTH BUILDING

In geology the contest was once very sharp and to many seemed to be somewhat hazardous to the cause of Christianity. Geologists triumphantly told us that the facts of geological science make it almost certain that the earth is much older than the Bible chronology makes it, and we must admit that up to the time of modern geology it was the generally received opinion of the Christian world that the earth was only about six thousand years old. That staunch and generally clear-minded Scotch divine, Dr. Chalmers, was the first to announce that the Bible nowhere definitely fixes the age of the earth, it simply refers to the time of man's existence upon it, and this is the indisputable fact. This same divine also said that between the first and following verses of Genesis was room for a period of sufficient length to acount for all the facts of the various geological formations. And this, in the main, is the received opinion of the Christian world, and this has quieted the church and checkmated the vain-glorying of skeptical geologists.

Upon the subject of the deluge there has been some supposed contradiction between the teachings of the Bible and this science. Geologists differ among themselves as to the extent of the deluge, some saying it was local, and others that it was universal. We believe, however, that the most recent and reliable of them teach the local notion of the flood, and we believe, moreover, that the most recent and reliable Bible expositors teach that the flood was local as to the earth, but universal as to

man, and with this view it is not difficult to harmonize science and the Bible. And we may say that intelligent skeptical scientists have pretty generally abandoned the hope that in the domain of geology they will ever discover any material discrepancy between Bible teachings and geological facts. But as they leave the vanquished field they fling back the taunting words that, "you so often change your interpretation of the Bible." To this we answer that interpretation is not infallible and inspired, and we do emphatically deny that in this change we have ever contravened any great moral truth of Revelation, and besides this, such a criticism comes with ill grace from them, since perhaps no class of scientific men have so much and so often differed among themselves, and have so often reversed former conclusions, as geologists.

Geology is the science which treats of the structure of the earth, its strata and development. In later years it has been discussed under two general divisions, viz., cosmogony and palaeontology. Cosmogony proper treats of the origin of the earth; palaeontology treats of the structural formation of the earth, the plants and animals found in the different strata, and the different causes which have produced the various changes in the history of the earth.

The oldest heathen cosmogonies are found in India, but the first authentic account is given by Hesiod, and is in verse.

The Ionic philosophers were the first prose writers on this subject. There are many fabulous theories which have no real value and are nothing more than mere curiosities of opinion. The different theories worthy of consideration are the following:

The world has existed from eternity under its present form, as has also all animate and inanimate nature. It is enough to say that this theory is not now held by any considerable number of scientific men. It was, however, embraced by Aristotle.

Again, the matter of the universe is eternal, but not its form. This was the teaching of Epicurus, and most of the ancient materialistic philosophers. They say that

by some chance the world sprang out of the union of atoms or chaos, which preceded its present form, and in some form or other, this is the teaching of modern materialistic philosophy, and all of such theories make the world self-originative, i. e., originated without a cause which is a contradiction.

Again, the matter of the world and its form are both caused by a Divine being, the Creator. It is admitted that the account in Genesis is very ancient, and is worthy of thoughtful consideration. No one claims it to be written in modern scientific language, but the substance of it is generally believed to be correct.

The first verse teaches the divine creation of matter, but nothing is there said of its order, or arrangement, or the exact time when it took place. Most geologists believe that between the first and the following verses intervenes a sufficiently long period to account for all the geological periods, or ages.

Again, some think that creative power was exerted at the beginning only to bring matter into existence, and then matter was left to arrange itself according to the laws of matter, such as attraction, specific gravity, etc.

Others think that divine energy is constantly and directly exerted in nature, and these verses in Genesis, speaking of the arrangement of matter during certain days, mean long geological periods in which this energy was exerted with which we may say, the theories of some modern geologists concur.

The primitive condition of the earth is supposed to be alluded to in Genesis as being "Without form and void"; "That darkness was upon the face of the deep." From a scientific standpoint, it can only be conjectured as to what was its first condition, as geologists only study it according to its form or strata.

There was a condition, of course, before this. It is agreed that the temperature of the earth increases as we proceed towards the center at the rate of one degree Centigrade for each 100 feet, hence by a slight effort of the imagination it may be inferred that the center is a molten mass of matter. It is perhaps true, then, that the time was when the whole earth was an incandescent

globe, with all of its water, and other vaporizable matter, in a gaseous state surrounding it. It is believed that the crust is about 2,500 miles thick and that it continues to thicken as the earth continues to cool.

We may mention here that there have been some persons, mostly of a religious character ,who have held that the earth was at the fiat of the Creator, at once and fully created, with all the fossil plants and animals imbedded in the rocks, with all the coal, gold and ores in the earth as they now are! It is true, however, to state that such views are not now held by any persons of acknowledged scientific ability.

A late theory is that the earth is now as solid as steel at the center and has become so by the laws of specific gravity and revolution. Omitting water, the average density of materials on the surface is 2.5; the mean density of the globe is 5.6, and at the center it is 16.

Some hold to a semi-liquid structure between the solid center and the crust of the earth which is the source of volcanoes, earthquakes, oil and gas.

Palaeontology is divided into dynamical, structural and historical. Dynamical geology treats of the agencies which have affected and modified the structure of the earth, and we presume these have been more or less active during all ages. Some authors treat this subject under the head of chemical geology, but certainly some of the causes are physical and not strictly chemical; as atmosphereic agencies causing the disintegration of rocks by the action of oxygen and watery vapor. This with the exception of a small per cent of vegetable matter is the way soils are principally formed, and different soils are caused by the disintegration of different kinds of rocks.

Of course frost and other agencies assist in this work. The winds, often from the sea, as from Cape Cod, and San Francisco have blown the sand inland,, destroying the fertility of the soil.

This encroachment has been very marked in some instances as at Suffolk, England, for instance, where it has increased at the rate of five miles in 100 years; so in Africa whole cities have been buried by the Simoon. Aqueous agencies, such as rain, rivers, and so on, have

been very active. Rain absorbed in rocks and soils greatly change their condition, and that which passes off forms streamlets and rivers which in turn form gulleys, ravines, channels and canons.

The great erosions of rivers forming channels, and carrying sediment have produced great changes of the earth's structure. It is estimated that the annual deposit from the Mississippi River in the Gulf of Mexico is equal to one square mile, 263 feet deep. All erosions tend to carry down the mountains and fill up the oceans, and thus reduce the earth to a plane. All sedimentary deposits come from stratified rocks. The erosive effect of waves and tides may be seen in marked cases as at Cape May where the coast is wearing away at the rate of nine feet a year.

A church situated on the coast of Kent, near the mouth of the Thames, in the time of Henry VIII, stood one mile inland, but in 1804 the coast had been so eroded that a portion of the church fell into the river and it was abandoned. Again, ocean currents carried an immense quantity of sediment, also glaciers, some of them 40 miles long, and 300 feet thick, carried immense boulders as well as soil down from the northern regions and deposited them towards the equator.

Igneous agencies have been very active. The other two agencies tend to level down the earth; these tend to break up the surface and make it uneven. The mean temperature of the earth at the equator is 80 degrees; at the poles it is 0, and the mean temperature of the whole earth is 58 degrees. The isothermal lines do not run parallel to the lines of latitude; the increase of one degree for every 100 feet toward the center will give a temperature of 2,500 degrees, 30 miles below the surface the heat is intense enough to fuse most rocks, which temperature required is about 3,000 degrees F.

Volcanoes, earthquakes and geysers all tend to break up the stratification of the earth and prevent it becoming a plain.

Organic agencies, such as vegetable accumulation, bog-iron ore, lime accumulation, such as coral and a wide dis-

tribution of organisms throughout the world have all tended to change greatly the structure of the earth.

There are many different modes of classification of structural geology, one is by eras, the other is by rocks, and a third by the extinct life formations. The Eozoic era corresponds with what is known in the rock classification with the Huronian and Laurentian. Little or no life formations are found here. In the Paleozoic era the kind of life found is three fold; first, invertebrates; second, fishes; third, amphibions. The upper layer is the carboniferous strata.

The first invertebrates are found in the Salina, Niagara and Trenton rocks, and the fish found in the Catskill, and Hamilton kinds of rocks, and the amphibion are found in the carboniferous.

The Mesozoic era is the era of reptiles. The rocks in which they are found are cretaceous, jurassic and triassic.

The Cenozoic or Neozoic is the era of mammals, and the kind of rocks in which they are found are called tertiary and quarternary.

The Psychozoic era is the era of man.

The Paleozoic means ancient life, where, as we have seen are found three kinds of organisms. These surely must have been absolutely innumerable for already there are discovered over 10,000 different species of shells and animals which belong to this age.

In the Eozoic age we have the dawn of life, during which time the great iron-ores of our lake regions, Missouri and Sweden, the oldest rocks known were deposited.

Mesozoic means middle period of life; it is the age of reptiles where the numerous reptile and bird tracks are found in rocks, and the remains of birds and animals of immense size.

Cenozoic or Neozoic means recent life, and here properly the modern history of the globe begins. During this age very great changes of the surface took place; all the upheavals of continents and volcanic changes have taken place in the tertiary formation and the rise of the Western Continent was during this period. Mammals now

distinctly appear, and it is an interesting geological fact that both the horse and the camel originated on the Western Continent. There are about thirty-five species of the horse, and the first geological horse was no larger than the fox; it had three toes on the hind foot and four on the fore foot.

This is also the great glacial period during which existed mammoths and behemoths and other immense land animals.

The Psychozoic is the era of soul life, and includes the stone age, the bronze age and the iron age. Man's appearance on the earth is comparatively recent as compared with the geological periods.

CHAPTER VII

BIOLOGY AND EVOLUTION

Biology is that science which treats of living organized substances or beings, and popularly it is the science of life. It treats of organized bodies in contrast with unorganized bodies, or mineralogy, the science of mineral substances. It is divided into two general branches, viz., botany and zoology. Botany is the science of plants, living and extinct. Zoology is the science of animals, living and extinct. In certain important features, plants and animals agree with each other, and in these same points they differ from minerals. Their primitive conditions and chemical constituents are the same, and substantially, all vegetable and animal life starts from cells, and these primitive cells are mainly oxygen, hydrogen, nitrogen and carbon; three of these are gases and only one, the last, a solid.

This first cell, or rather its contents, have been named by some biologists protoplasm, which is the first form of life, and while some minerals are composed of some of the above elements, yet they have no cellular organization. Plants and animals multiply and renew these cells.

This renewal repairs the system, produces growth and gives power for work. The tree sheds its leaves and casts its ripe fruit, and these may nourish the soil, and the soil in turn nourishes the tree that it may grow and bring forth more leaves and fruit.

The mineral wears away, and although it may also increase in size, it does so by adhesion and accretion, but never by nutrition or assimlation.

Plants and animals have the capabilities of reproduction of their kind essentially like those from which they came, although with almost endless variety. This great fact or law in biology insures, generally, the perpetuation of the great types of animals and plants.

You may break a stone into a great number of parts but there is no multiplication or re-production of the mineral.

The existence of the organism for a period of time, and this to be followed invariably by dissolution and death, is a striking characteristic of plants and animals. This life period may be shortened by accident, enemies or disease, and this applies alike to both animals and vegetables. No one speaks of the life of a stone or of its death; it may, however, undergo many physical and chemical changes, but in no case do we speak of its life or death.

While plants and animals thus agree with each other, and also thus differ from minerals, it is important to know in what they differ from each other. It is not difficult to distinguish between the highest forms of animal and vegetable life, but this topic properly comes under comparative anatomy.

There are, however, two distinctions which may be named. Plants derive their nourishment by mediation, i. e., by absorption from the inorganic world through their roots and leaves, the latter taking in carbon and giving out oxygen. Animals appropiate nourishment, generally, immediately from plants, exhaling carbonic acid, inhaling oxygen. The animal either by reason or instinct is guided in the pursuit and selection of its food.

It is true that the sunflower will turn its face as if welcoming the smile of the morning sun, but the morning-glory at the coming of the sun closes its flower.

The Evolution of Life

We begin this point by treating first briefly the origin of life as shown in the fungus. The fungus is best seen in the yeast cells; and these cells are generally rounded or a little oblong and are generally linked together in

groups. Each one is about three-thousandth of an inch in size and is transparent. The sac is composed of cellulose; the contents of the cell are called protoplasm and are composed of water, mineral matter, protein and fats.

The protein is that which gives life to the cell and is composed of C., H., O., N., S. or P. This protein is found in all living matter, and resembles the white of an egg. There are little grains or granules in each cell, which are the food on which the protein feeds and grows. This cell-jelly and granules are churned up and down and then little buds come out around the cells, and by and by, these buds break away from the original cell and become living independent cells.

This original cell is called Torula, and the little cells are called Torulae, and this is what is called spontaneous generation.

Yeast, like mushroons and toad-stools is a fungus, and it is white because it gives off carbonic acid, and this is really what makes bread white. All plants that take in carbonic acid are green. There are differences between the plant cell and the animal cell.

The protoplasm in the plant cell is shut up in a close cellulose sac, but the protoplasm of the animal cell has no such sac, but forms a wall or surrounding of its own.

The plant cell makes its own protein, but the animal cell destroys or consumes it. How did the first cell start? We know what are the elements of that cell, but no chemist can so combine them as to make either a plant or animal cell. Shall we not say that the Divine Creator made it rather than that Nature is the Mother of Nature!

Observe next the mold or green plant which is seen on the rain trough and on old palings and trees and stone walls. These cells are not always green, occasionally they are red, but in each case they are composed and formed like the Torula. The name given to this cell by scientists is protococcus, which literally means first berry.

Little green grains in the cell give the color, and this cell takes in carbonic acid and grows in the sunlight, and the cell grows by division. The red snow of the Alps, and the Arctic regions is this protococcus, which the anci-

ents thought was blood sprinkled down from heaven as a warning, or a sign of wrath. This will sometimes spread so rapidly as to cover hundreds of acres in a very short time. There is also a green snow plant. As we all know mold spreads very rapidly, showing its rapid growth. Next notice the fresh water hydra. These are so named from the serpent supposed to live in Lake Lerna, and supposed to have fifty heads, and when Hercules tried to kill it by cutting off each head, then two more would grow in its place. So if you take the root of duck weed which is about one-half of an inch long, and cut it in pieces and place in a glass of water in the light, but not in the sun, in a few hours they will cling to the side of the glass next to the window. They hold on to the glass by one end, and reach out for food in the water by the other. Little knobs grow along the side and finally separate and become living hydra, each like the first, having tentacles, a mouth and a body.

The human blood cell is called amoebae. A drop of blood is composed of a number of reddish looking bodies called corpuscles, and a number of larger transparent jelly-like bodies.

The transparent body is a cell which is ever changing, and this cell is larger than the yeast cell, being about 1-2500 of an inch in breadth. It has no wall but itself. It has some granules inside a nucleus at the center, and this cell when mildly heated will move rapidly among the red corpuscles. This human cell is different from other animal cells, but it is somewhat difficult to distinguish between them. They grow like the mold cells, by division and sub-division, or fission, and when maturity is reached, they no longer multiply. Thus we have seen in brief, the evolutions of life in the fungus, or white plant, the green plant, the hydra and the human cell, each of which is composed of water, mineral matter, protein and fats.

General Evolution

Evolution in general is the doctrine of development from the simple to the complex, from the homogeneous to the heterogeneous, and it is applied to nature, art, science, history and religion.

In its restricted sense it applies only to biology.

Let us look first to scientific evolution. Some of the ancients more than hinted at the doctrine. An Egyptian myth asserts that all material things were developed from a chaotic egg. Shales taught that originally the world was in a fluid state, and others taught that all nature was formed out of atoms. In modern times Leibnitz taught, in 1693, the original fluidity of the earth. French, English and German writers took up the same strain, but Kant in 1755, originated the Nebular Hypothesis and La Place, and the two Herschels, Sir John and Sir William, elaborated the doctrine. In biology Wolff, in 1759, and Goethe in 1790, taught the transmutation of species. Lord Monboddo, in 1774, and Lamarck, in 1809, suggested the possible organic development of man from an ape. Dr. Erasmus Darwin as early as 1794 started the speculations which have since borne his name, although Charles Darwin in a later period gets the credit for these original suggestions. To him is attributed the origin of the theory of Natural Selection.

To Herbert Spencer belongs the origin of the expression, "Survival of the Fittest," but the combination and development of the principles as applied to plants, animals and man, was chiefly the work of Prof. Charles Darwin, as seen in his published works in 1853 and 1859. From this time on many able writers have appeared, until it is now generally admitted that, properly speaking, and guarded the doctrine of evolution is correct.

But no subject scarcely needs to be more carefully limited and correctly applied. In general, then, it may be said that all departments of nature show progress, or development, whether in astronomy, botany or zoology, in fact, in both organic and inorganic nature.

The rudimentary form so well observed in plants and animals is a clear and strong proof of the doctrine of development.

There is also method in the progress generally from the simpler to the more complex, and from the lower to the higher.

This progress is often marked by long steps, or gradations, and is particularly shown in the commonly admitted classifications, or ages, or periods in geology. It must be admitted, however, the paleontology shows most conclusively that many species have become extinct, for instance, 500 species of trilobites are all now extinct, of 450 species of the nautilus, only two are now living; of the 700 species of ganoids, composing an entire tribe, is now nearly extinct.

But now as representatives of these, and other extinct species, we have others evidently developed from them which take their place.

Look next at the evolution of mind and consciousness. Darwin, Pope and Chauncy Wright and others have written much on this subject.

Darwin's great mistake was, as we think, in trying to press evolution into every mode of life that came under his observation, and hence many of his friends could not agree with him on the development of the mind of man from the instinct of the animal. Hence says Prof. Huxley: "That between the highest mind of the highest ape and that of man there is an enormous gap, a distance practically infinite." Said Prof. Tyndal in 1868, in his address before the British Association, "The passage from the physics of the brain to corresponding facts of consciousness is unthinkable." The soul of man, then, is not developed from the instinct of animals.

Next observe the evolution of man himself. Was man at first a savage and by self-effort has he evolved his own civilization? Or was he at first somewhat puerile, ignorant, but innocent? Lubbock and Darwin take the first position, and the most of religious writers now accept the second with some variation of expression. With here and there some advances among some nations, retrogression was perhaps the rule with man before the Christian era. Self-development has not been the rule in history, but rather man has been developed by foreign or outside forces.

Christianity is the only power that has made in general continued progress for so many centuries, and even this progress has not been uniform. Evolution proper, does not relate to the origin of things. Nature as to its origin was instantaneous, and from creative or divine power, and its progress has been according to law, but not caused by law. There must be a first cause, an evolver before an evolution, and that power continues to operate through almost endless variations and selections. So we conclude there is in theory both an atheistic and theistic evolution.

Physiology and Life.

It was in the science of physiology that the contest was chiefly going on in later times, but it has changed to psychology now. Matter was to be the god of modern scientists, around which such men as Buchner, Huxley, Bain, Carpenter, Draper, Youmans and Barker would gather and worship. Says Buchner: Force is matter and matter is force. Mind is matter, soul is matter; there is nothing but matter. Vital force or life is but the sum of all physical forces. So they go on in an endless circumlocution, using frequently unknown words to de-describe what is to them unknown. One would think that in reading such works as those of Prof. Huxley and Herbert Spencer that there had been really a heavy tax laid upon all languages in order to find a scientific nomenclature for the main purpose of appearing to be scientific. They dredged all lexicons to find suitable terms to describe something they themselves had not yet found, and they made a great effort to express in words that which is not known to science. They have as yet determined nothing.

The German scientists a few years ago spoke of the cell theory of the origin of life, and out of it came the theory of plasm of the blood, and Huxley caught up the idea and named it Protoplasm and announced to the world that life had a physical basis. And Herbert Spencer and Carpenter announced that biology and psychology are but branches of physiology, and that the physiology of man does not

differ essentially from the physiology of beasts. And now underneath nearly all such intricate speculations we must deliberately write, "Not proved," and until they are proved we need not be much concerned. We are willing to meet science with Revelation, for really here is no antagonism, but we do not propose to answer the chameleon forms of the skeptical imaginations of modern scientists. Give us settled conclusions, fair deductions, reasonable propositions, and we shall be ready for the contest. We do not permit ourselves to be drawn away from our safe and cheerful abode by the maneuvers of scientific ambuscade.

The accomplished Renan, seeing, no doubt, the same conclusion to which we are arriving said it was not that any *one* science was in conflict with Christianity, but that *all* science rejected the supernatural. How can that be? If no one of the parts is in conflict, can the whole, made up of these parts be in antagonism This would be a contradiction, and hence untrue. But if he means that the spirit and essence of science as such is opposed to the supernatural, then we ask is this even certainly true? If he means by the supernatural that which is above the sensuous, that which cannot be known by any one of the ordinary senses of the body, then we reply that there are many facts received as science which are not attested by any sense of the body. And if he means that science rejects the presence and interference of the spiritual and Divine, then we ask is this an opinion or a settled conclusion of scientists? Is it not the opinion of the few while the opposite is the long established conclusion of the many, and not the many of the ignorant either, but of the wise. Those eminent Christian philosophers, Racine and Kepler, Newton and Faraday, and Edison always found nature and the supernatural, the human and the Divine in sweetest harmony. The God of nature and of grace was to them one God. Consciousness should always be received as certain evidence as sensuousness, and in many cases it is preferable proof. Is not the conviction of a man's mind and heart as much to be relied on for truth as the possible illusions of the eye or the deceptions of the hand? Self-consciousness is the highest

and truest knowledge, and humanity will have to be entirely reconstructed, and that on a different basis, before you can eliminate from the consciousness the knowledge of the supernatural. We admit that this knowledge rests on a somewhat different basis than scientific knowledge so called, but it may be as certain and as satisfactory as the other. The one need not, does not necessarily exclude the other. Nature and the supernatural are everywhere interwoven in the fabric of nature, the supernatural being the golden chain, and nature the variegated filling, and God himself is the skillful workman, and as the workman deserves more praise than his work, so we should not love nature less, but God the more. In conclusion, we would recommend a more careful and thorough study of this subject, especially by the Christian ministry and Christian students, and by those intending to become ministers; not that we think that they are more deficient generally in this respect than many scientists are deficient of the knowledge of Christianity. No, we rather think the greater ignorance lies on the other side, and we think it entirely true that ministers generally or proportionately know more of science than irreligious scientists know of the Bible or Christianity.

Ministers should study science, not simply for the purpose of preaching it on proper occasions, but to be able to intelligently defend it in print and elsewhere. And there is especial need of this when we remember that three-fourths of all our public lecturers and contributors to various journals and magazines are ministers. Reckless denunciation has reacted to the church's injury, and has in former times at least added something to the conviction that it was opposed to scientific learning. And by such study we will learn to appreciate more fully the objections of scientists, and by so doing we will not only be amply rewarded by the knowledge of scientific truth, but will also find so many beautiful illustrations of divine truth.

On the other hand, let scientists study Christianity, for it is worthy of their loftiest genius and deepest profun-

dity, and instead of it cramping the mind it will expand the soul, and instead of it being a blank forest its rich fruitage is hanging from every bough, and instead of it being a barren field it is flowering all over with the rose of Sharon, and instead of it being a dreary desert its refreshing fountains have made glad the hearts of thousands of explorers, and at last standing on a mutual platform high and lifted up, we will both acknowledge that the God of nature and the God of Revelation is one God over all and blessed for evermore.

CHAPTER VIII

PSYCHOLOGY, OR THE SOUL'S POWERS

The terms psychology, mental philosophy and mental science are synonymous. The scope of the subject is mind, soul or spirit.

Mind is not a result of matter or force or both combined. Mind differs from matter, being self-active, self-conscious and has none of the phenomena of matter. Its existence is known by intuition, as "I know." It is known also by its phenomena. It is derived from the Creator.

Consciousness is the basis of psychology. Man is conscious of the existence of mind. He is conscious of his mental states. Consciousness differs from conscience the moral faculty.

The faculties or properties of mind are intellect, sensibilities and the will.

Perception is by mind, by the brain or by the senses, as the eye, ear, smell, taste, touch. There is also the memory, the imagination and the understanding.

The will is that power of the mind by which we decide to do anything, and the act of the will is called a volition. There are three essential elements in a completed volition.

The first is the motive, the reason why we put forth a volition, and there may be different motives at the same time, and the one that moves the volition is called the preponderating motive.

Then choice is the act of selecting one from other courses of conduct, or of deciding when only one way is

before us. Choice is essential to a voluntary and free volition, but choice and volition are separate acts or motions of the mind. I may make a choice, but not execute the volition concerning the choice, and in my mind I may choose between two objects, but take neither. There are many free and spontaneous actions of the mind not governed by choice, such as the intuitions.

Having made the choice, being influenced by some motive, the next act is to execute the choice by the force of the will. Thus the will is strictly the executive faculty of the mind.

There are two theories respecting the freedom of the will, namely, that all volitions of the normal man are either free, or necessitated. First, they are free, because we know we could have made some other choice and could have taken some other course. Hence there follows either approval or disapproval in consequence of our own conduct. Second all enforcement of criminal law proceeds upon the supposition of the freedom of the will.

Where insanity is pleaded, it means moral inability to perform a free and responsible action.

Hence all duty and obligation hinge on the freedom of the will. Hence also enforced volitions imply fatalism, i.e., we must do as we do.

The will is the source of all voluntary action, without which man would be of little use in the world, except as a slave. The achievements of science, the wonderful discoveries, military success and great moral reforms show the force and power of the human will. To properly cultivate this force we should, first, develop a personality; second, learn to conquer obstacles; third, decide promptly; fourth, let the decisions of the will be firmly fixed in a sense of duty.

Intuition

Intuition is that spontaneous power of the mind which gives us primary ideas and primary truths.. Hamilton names it the regulative faculty. Kant names it the rea-

son. Scotch philosophers call it common sense. Its products are not derived from perception, abstraction or conception.

Space is not a percept but it implies extension which is the necessary condition of all matter. Kant and his school say it is an ideal conception, a form which we impose on matter. Space has length, breadth, depth and height, and may be measured as in geometry; properly considered, however, space is infinite.

Time is the cognition of succession in events and is not a mere idea, but a reality, and properly considered it has only one dimension, that of length.

Identity is difficult of explanation, and for convenience we make three divisions of identity. Inorganic identity is sameness of structure and material. Strictly speaking there is no such thing as absolute identity in matter, as it is constantly changing. Commonly speaking, however, a knife is the same knife, although it may have had different blades at different times. A ship is called the same ship, although it has many times changed its sails, ropes and planks.

Organic identity is the continuity of the life principle under the same general structure and organization.

Personal identity is that by which we are conscious of being the same person, although having passed through many changes.

Personal identity, however, is more of the spirit than of the body.

A cause is that which produces an event. I see wax melt, for instance, and I know there must be a cause that is heat.

The intuition of the beautiful is both subjective and objective, and only to the mind capable of the emotion is anything beautiful, but there must be an object having order, proportion, unity and variety or else there will be no sense of beauty. One beautiful feather would not make a beautiful bird. The beautiful and the useful are not necessarily one. Water in a canal is useful, but but water in the cascade is beautiful.

Beauty in man is complex and almost indescribable. We speak of physical beauty, but there are some who are

not physically beautiful, of whom we say they are beautiful. Hence, "'tis the stainless soul within, that outshines the fairest skin."

The sublime is closely related to the beautiful. In the sublime there is more of the majestic, the grand, and the lofty. A small cascade is beautiful, but Niagara is sublime. A mound covered with flowers is beautiful, but a mountain covered with pine is sublime.

The sublime has the idea of vastness and power. The flash of lightening is beautiful, but the roar of the thunder is sublime.

The ludicrous means essentially the incongruous and generally produces pleasurable emotions such as laughter, as a boy with a man's hat on, or a pig in a church. A blunder is an incongruity between what was said or done from what was meant or intended. An Irishman having his face blackened during his sleep, being aroused and going on his journey ten miles, stopped at a hotel, and looking in a glass, said: "Sure, they've waked up the wrong man and left me ten miles behind."

Wit is a flash, and humor is a gentle and glowing remark. A pun is a play upon words, or it is the wit of words of similar sounds, but dissimilar ideas.

Satire or sarcasm is literal praise, but real ridicule.

Burlesque is a form of caricature in language, as seen for instance, in Don Quixote.

The intuition of the true, negatively speaking, stands in opposition to that which is false. The ethical intuition is universal, as all nations have words to distinguish between the good and the evil, the right and the wrong, the true and the false.

This intuition is the foundation of all law and government, it is absolutely original with human nature. It exists, however, under almost every shade of clearness or obscurity. This intuition may be cleared and improved by education. To determine when a thing is right we must have a standard expressed or implied, and the ultimate standard of all ethical intuitions is the will of God as expressed in he Bible. This standard therefore is not as some suppose, the highest happiness, nor utility, nor legal enactments.

To cultivate the scientific intuitions we should study the sciences. To cultivate the aesthetical intuitions we should look upon the beautiful and the sublime and read and meditate about them. The ethical or moral faculty may be cultivated by the love of the truth and of all upright, moral actions, and above all things by a study of the Bible.

The sensibilities are the powers of the soul by which we feel.

Simple emotions are divided into two classes. Intuitive emotions, such as spring up spontaneously in the mind, as cheerfulness, and melancholy, and pleasure of companionship, sorrow at the loss of friends and sympathy for others.

The rational emotions are such as spring up in the mind and have a reason for their existence, and these are divided into three classes; first, egoistic, as pride and humility; second, the aesthetic, the new and the wonderful, the beautiful, the sublime and the ludicrous; third, the ethical emotions are all such as have a moral character, the sense of obligation, satisfaction and remorse.

The affections are those sensibilities which go out towards an object. There are two classes; first, the benevolent affections. These are divided into five classes—friendship, gratitude, patriotism, philanthropy and piety.

The malevolent affections are, in general, the opposite of all benevolent affections, as resentment, envy, jealousy and revenge.

The desires are the feelings of a wish to possess an object, as animal or bodily desires, as for food, activity, or repose. Second, the rational desires, as for happiness, society, wealth, power, esteem, knowledge, hope and fear.

In this day we discuss the methods of mind culture at great length; we seek for plans and incentives for such cultivation, but really, how much is done to find plans and incentives for the cultivation of the sensibilities? The heart or the sensibilities surely needs culture, as hearts are stronger than swords, and love conquers where steel is powerless.

The great orators of every age have been men of great

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hearts and intense feelings, indeed, there is no work in which you can succeed so well without the fullest cultivation of the sensibilities, for the sensibilities are powerful impulses for good or evil.

The higher and nobler feelings need to be stimulated and cultivated, and this may be done by meditation upon high and noble themes, pure and virtuous objects, by loving that which is recognized as the pure and the good.

The lower sensibilities are active and need to be repressed or controlled, but never destroyed. To cultivate benevolent affection is highly important, as selfishness is the bane of narrow-mindedness. The malevolent affections must be controlled, otherwise the man becomes a brute, a savage. There is danger of over cultivation of even the highest sensibilities of the soul, and when this is done a man becomes an enthusiast, working it may be in the best causes, but working without reason. This, coupled with an undulycultivated conscience, makes what maybe termed a religious pest, the man becoming impractical in all his work, losing sight of wise plans and methods, when the man is carried forward by a tempest of passion or superstition.

Conscience is generally named the moral impulse of the soul. Joseph Cook says it is the perception of right or wrong in motives and a feeling that the right ought and the wrong ought not to be chosen by the will. This definition is not full enough, we think, as conscience approves or disapproves anything already done.

It is seen that probably no one sentence can correctly define it. It is composed of two elements; first, a sense of obligation, as I feel I ought or ought not; second, a feeling of approval or disapproval, complacency or remorse when we have done anything.

There is, then, an intellectual and emotional element in conscience, hence it belongs midway between the intellect and the sensibilities. Conscience is an intuition, primitive and original, not something brought into man's nature by a process of development or education. It is universal as no race however degraded is wholly destitute of it. They all say men ought to do the right and avoid the wrong, but they may differ greatly as to what is right

and what is wrong. The decisions of conscience are not infallible because the percepts and concepts may be deceptive, and because the moral sensibilities may become so dulled as to fail to respond in approval or disapproval, hence all forms of wrong have been committed under the guidance and approval of conscience. Hence man needs a better guide than can be found in himself and that infallible guide we believe is the Bible.

Conscience is susceptible of great abuse. It is the voice of the soul, but this voice may be smothered by the clamors of passion and appetite. It is a warning-bell, but the power of habit may so muffle its sound as to be scarcely audible.

It is a monitor, but it may be so stupefied by repeated vices that it fails to sound the note of alarm.

Conscience is capable of great cultivation. Our moral sense of the right and wrong may be greatly improved by the enlightenment of the understanding, enabling us more clearly to discriminate between the right and the wrong, hence the importance of the widest diffusion of learning. Is a man guilty who follows the dictates of his conscience? That depends on two things; first, whether he has failed to use all his light, or whether he has previously abused his conscience, and if so, he is verily guilty, and hence can not be excused on the ground of conscience. Generally speaking, however, every one should follow his conscience, but that conscience should be carefully tested by the perfect standard of moral conduct, which is the Word of God.

The understanding or reason is that faculty of the mind by which it takes the materials furnished by the other faculties and works them up into new products. Kant calls this faculty the understanding; Locke calls it the reflective faculty; Hamilton calls it the elaborate faculty, and Dr. Porter calls it thought power.

Abstraction is the power of forming abstract ideas; as color, separate and distinct from any object. The products of abstraction are called abstracts.

Conception or generalization is the power of forming general ideas. A general idea is one which embraces many particulars, as a horse, of which we think as be-

ing white or black, large or small. The product of conception is called a concept, and as to quality or intensity these concepts may be clear or obscure, positive or negative, false or true, ideal or real.

Judgment is the power of perceiving the agreement or disagreement between two objects or ideas, and the two ideas are named terms of the judgment. The judgment is based on comparison of these ideas; as, snow is white. A proposition is a judgment expressed in words and involves two ideas which we again call its terms. Every judgment then contains grammatically and logically, a subject, a copula and a predicate, and here is where psychology and logic run together. A judgment is a comparison of two ideas; reasoning a comparison of two ideas through a third. Hence the process of reasoning requires three judgments expressed or implied, viz., the two judgments compared and the conclusion derived from them, which three form what is known in logic as the syllogism. Reasoning is of two kinds—inductive, deriving a general truth from particulars, as heat expands iron, and heat expands zinc, and heat expands all substances.

Deductive reasoning is as follows: All metals expand by heat; heat will expand iron. The cultivation of the understanding is of the highest importance The understanding is the faculty of thought, and thought is power, and the greatest power in the world. Its cultivation should begin early while perception is keen, and conception is clear, and memory retentive and imagination vivid. Cultivate abstraction, but not too much. Cultivate judgment; learn to have thoughts or opinions of your own on all subjects; compare heights, lengths, weights, colors, etc. You should cultivate reasoning and this is perhaps the strongest faculty of the mind. The study of mathematics and logic develop deductive reasoning. Inductive reasoning is now considered very popular because it reasons from facts and objects, from which we derive principles.

CHAPTER IX

ETHICS, OR MORAL PHILOSOPHY

The different terms which are employed are as follows: Moral philosophy, moral science and ethics.

Moral philosophy, as the term indicates, is the philosophy of morals. Moral science is the science of morals. Ethics is that branch of science which relates to moral duties, and the term ethics, is lately applied to many other branches of study, as legal ethics, political ethics, medical ethics and social ethics.

These are rather misapplications of the term as originally intended, and to our thinking, ethics is the most appropriate term. The science is applied exclusively to man as he only has a moral nature. It implies that man is capable of performing moral actions, and there is no other moral or responsible agent in the world.

A moral action is an action performed by a moral agent and a moral agent is a person who is capable of performing an intelligent and responsible action.

The subject of ethics implies also a standard by which all moral actions and duties are to be tried, and it will be seen that there may be a great number of standards.

Every race and nation, and especially every form of religion will have its standard of ethics.

Ethics has its beginning in those moral proverbs or practical sayings of the wise men of the times, as, for instance, the savings of the wise men of Greece, "Know thyself"; "What is difficult—to know ones self; what is easy—to advise another."

"Speak not falsely."

"Learn to command by first learning to obey."

"Nothing in excess."

Another one of these wise men said: "The possession of power will bring out the man."

Confucius said: "He who exercises government or self-control by means of his virtue may be compared to the North Polar Star, which keeps its place and all others turn towards it."

"What you do not like when done to yourself, do not to others."

"I am not concerned that I am not known. I seek to be worthy to be known."

Socrates taught that all moral excellence rests on true knowledge, and all wickedness proceeds from ignorance.

The Aristotelian schools, viz., the Stoics, Epicureans and the Neo-Platonists introduced no fundamentally new doctrines; only a few modifications of the Socratic school.

Aristotle found the highest good in man in happiness, rational happiness and well being was the result of well doing.

Modern ethics began in England during the time of Thomas Hobbs. He taught that distinctions about right and wrong depend upon positive legislation, or laws; hence they were changeable.

His opponent, Cumberland, taught that, "The common good is the supreme law."

Cudworth wrote against Hobbs, saying that moral good and evil cannot possibly be arbitrary things, as they are discerned by reason, and not by the will.

Locke taught that moral good and evil are the agreement or disagreement of divine law, or civil law, or the law of public opinion.

Dr. Samuel Clark resolved the nature of right and wrong into, "The eternal fitness of things." Wollaston based it in the truth of things.

Prichard said right and wrong are original conceptions or intuitions, and so say the Scottish philosophers, Stewart, Thomas Reid, and some others in England and America.

Among other writers Henry More, the Earl of Shaftsbury, Hutchison, Hume, Thomas Brown and Jonathan Edwards speak of "a moral sense of right and wrong." The moral sense is based upon judgment and conscience which implies that man has a moral nature.

The standards of ethics are numerous. In religion as in Hinduism, the Vedas; in Mohammedanism, the Koran; in Judaism, the Old Testament; in Christianity, the Bible; in law, the legislation, and in the person, conscience.

A Supreme Being.

The idea of a personal and Supreme Being must be considered in any system of ethics.

Is there a personal Supreme Being, who is self-existent, eternal and infinite? No one can ask a greater question than this. The manner of discussing the subject in former times was much plainer than now, as we think, and much more satisfactory. It was in apt and gracious words, if not in rigidly scientific terms. Perhaps modern writers have been drawn into this complex mode of treating the subject in order to answer the objections and criticisms of metaphysical skeptics.

We will first give what is known as the ontological proof. Things do exist. They have either always existed or they have had a beginning. Both of these are stupendous statements, and no mind can fully comprehend either one.

Things have not always existed; they had a beginning, and they did not begin themselves. They were produced by a power above nature, and hence that power which is above nature is supernatural. What existed before things or matter is uncreated, self-existent, and if uncreated and self-existent, then there is no room for any other thought than that of a personal Supreme, Eternal, Divine Being.

The second argument or proof is called cosmological, and is based upon the order, arrangement and adaptation, apparent in nature. It was this order and not simply quietude which induced Pope to say, "Order is Heaven's first Law." There is everywhere apparent adaptation of means to an end, as the eye to light, the ear to sound, the mouth to food, the man to earth, and the earth to man.

The next proof is teleological, which is based upon the

evident design and benevolence in order and adaptation in nature. The teeth were made for cutting food and not to ache; the stomach was made for digesting food, and not for dyspepsia; the feet were made for locomotion. A narrow view of nature, as of anything else, is generally an incorrect view, and it is the broad view which sees the general benevolence.

The fourth is the linguistic argument. There are three great sources of language: Turanian, Semitic and Aryan, and starting from these grand centers we find names or words in all languages more or less distinctly expressive of a personal Supreme Being. The Chaldaic has Ra, and the Iranic has Ahura-Mazda.

The Hindu has Brahm, which he calls the Great One; the Semites have Elohim and Jehovah.

The fifth proof is derived from the Ethnic Religions. With man, religion is original and not derivative; it is native, and not foreign. There are two ways of viewing the history of man, the one is to suppose that he started from a high and luminous plateau and then descended through a dark valley of degradation, out of which at some time in the past he began to ascend and is now on an upward inclined plane to a still higher plateau.

We rather view him as starting from a low plane, not so low as Sir John Lubbock and Prof. Darwin and evolutionists generally place him, and from which plane his course has been marked by ascents and descents, the average of which, however, has always been to a higher plane. Tracing man back along that uneven history, we are ever and anon passing his shrines, his temples and his gods, and we observe that he has made a good part of the journey on his knees.

Rude at times, his worship has been, but it has nevertheless been worship, and no tribe or people has ever been found which has been wholly destitute of religion or worship.

Another fact is evident in connection with this and that is the monotheistic form of religion was the original from which all forms of polytheism have sprung. Pure atheism is very rare, and still rarer is anti-theism which denies the possibility of a God.

These are the general and principal arguments now usually relied upon by moral philosophers in proving the existence of one Supreme Being.

The question is important as we believe there can be no system of ethics properly so considered without a recognition of a supreme moral government, and there is no supreme moral government without a Supreme Being.

Moral government itself is not based on the eternal fitness of things, nor on the expression, "God could not do otherwise."

It differs from fatalism and pantheism. Its source is external to nature, but not independent from it.

It is God, personal, self-existent and eternal. He is the source of both moral and natural laws, and between these there is no essential difference, as they both proceed from God, and so far as they are not perverted by man, they are the expressions of His will.

The moral laws apply to moral agents and natural laws to the material universe. Moral agents are, however, more or less affected by both.

The extent of this moral government must be considered. As natural law extends to all material things, so moral laws extend to all beings capable of understanding the relations of right and wrong.

Perhaps it extends also to the inhabitants of other planets.

The duration of this moral government is worthy of notice.

While the source lasts, the law must last, and as the source is eternal, the law is eternal unless this source shall repeal it of which there is no intimation.

The awards of moral government must not be overlooked.

If the source of moral law is eternal, and the subject of moral law is immortal, awards must be eternal.

The reward and punishment must be co-extensive with the subject, and that is eternal.

The principles of moral government are here stated.

Moral and natural law are administered on a different plan, the latter takes no account of character, the former does.

The results of violation in both cases are not confined exclusively to the transgressor.

The disproportion of penalty to the violation of natural law, as is supposed, may be seen, for instance, in the case of a child, which dies from the simple burning of the finger. So as is often seen, there is an apparent disproportion between sin and eternal punishment, but in both cases there is no doubt exact justice.

The evidences of moral government are as follows:

If the world is not under moral government all must be chance or fate. Destiny then is the result of fate or chance.

The order of things which we observe in the universe implies law, and any interference with that order involves punishment.

The result of harmony with nature produces reward.

Conscience is another proof.

The Bible, however, is the authoritative proof.

Man is a moral agent, and a moral agent is a being that is capable of performing a moral action.

A moral action is a free action of a responsible agent. If we are not responsible, then we are not moral agents. The following are not moral agents:

Idiots, heathen, little children.

The duties we owe to God are reverence, fear or love, no matter what the term may be, and this reverence leads to worship and worship is characteristic of universal man, and of no other creature. This worship must be exclusive and supreme.

It excludes all pagan worship or adoration of inferior objects.

It includes all those subordinate duties necessary for the completion of the acts of worship, such as prayer, ministry, and sacraments. It implies also obedience to His word. God having given us a communication, a revelation of His will, wherein not only general but specific duties are enjoined, it becomes man's duty to obey this

word. This word is not simply a token, a sacred history, a practical directory, but it must be man's supreme law which should be heartily obeyed.

The reasons or bases for these duties are as follows:

There being a moral government and man being a moral agent, it is his duty to obey this government.

God is supreme, and therefore has a right to govern with what laws he pleases.

God is the Creator and hence has a right to govern his own creation.

Man is dependent upon God, is upheld by Him, hence his duty to obey him.

Christian ethics adds another reason for obedience; the redemption of man through Jesus Christ, thus developing a sense of gratitude and love. These duties to God must be superior to those we owe to civil government; superior to those we owe to society, or to ourselves. Hence idolatry has always been punished more severely than any other sin.

The duties we owe to our fellow-beings grow out of the various relations which we sustain to each other. They may be classified; first, as domestic duties, and these originate with the home and home starts with marriage.

Marriage is a universal duty of all who by reason of mental or physical competency are capable of consummating the contract. The perpetuity of the race depends upon it, hence of such persons as referred to, it may be said to be not optional but a duty.

Celibacy is to be condemned. Monogamy is the original and proper condition of the race, and the history of civilized man, and even much of heathenism, condemns equally polygamy and polyandry. Hence follow the duties of husband and wife, such as mutual love and reverence, the conscientious observance of the marriage contract. Then there are individual duties. The wife owes obedience to the husband as head of the household, and on the other hand, the husband owes the wife protection and support. These different duties are founded upon natural and moral laws. The release from these duties is legally declared by divorcement. Next, we note the duties of parents and children.

It is the duty of parents to nurture and protect their children. It is their duty to govern and control their children, and this makes the parents responsible for their conduct until they arrive at majority. It is their duty to educate their children, mentally and morally, as they have no right to impose ignorant and vicious children upon society. Next we observe the duties of children to parents, such as obedience, love and reverence. The parents are entitled to the results of their labors until they arrive at majority.

The next general division is social duties, such as we owe to each other, as individual members of society.

These duties originate in the fatherhood of God and the consequent brotherhood of the race. We owe to every person justice, truth, love, and these duties grow out of the ethical nature of man and are emphasized by Christianity.

CHAPTER X

SOCIAL SCIENCE, OR POLITICAL ECONOMY

Political Economy is that department of social science which treats of the development and application of material wealth for the physical well being of men in society. It has been briefly termed the science of wealth. Under the ancient civilization of Greece, Rome, Egypt and India we discover many of the facts and principles of economics, but no clearly defined system or arrangement of those facts and principles.

Aristotle was the first to use the terms "Political Economy," but he used it in a vague and uncertain sense, but announced at the same time economic principles, which have stood the test of time.

In early years with the Greeks and Romans agriculture was the only form of honorable labor. All mechanical and commercial occupations were considered servile and degrading, and hence they developed no system of political economy in its wide and true sense.

"The Dark Ages" checked all industry and commerce as well as all forms of progress. Feudalism gave rise to the protective policy, and in some sense was the origin of monopolies, but in the sixteenth century sprang up the industries of commerce in the Italian cities and the Italians of this and the following centuries may be regarded as the founders of political economy. Spanish and French writers, under Henry IV., and Louis XIV., greatly aided in the development of this science. A restrictive policy which forbade the exportation of gold and silver, and the

subject of "The balance of Trade" were insisted upon during the first stages of this science, and England during the operation of the East India Company, was the first nation to oppose the restrictive policy and advocate free trade. In 1776, Adam Smith published his work, entitled "Wealth of Nations," which is regarded as the beginning of modern political economy. As a matter, of course, the earlier writers were English, except those referred to, and hence favored this modern policy of England, that of Free Trade, but latterly the United States has produced many able writers and this science in its various branches, is destined to be for some time to come a most prolific source of discussion by politicians and statesmen, and to every one who wishes the prosperity of his country it must be and continue to be a most interesting subject.

Wealth

Wealth is the chief subject of political economy, and wealth not so much in the individual as in the aggregate. The word comes from the Anglo Saxon, Welta and is thought to come from the same Latin root, *vales*. It is a synonym for riches, or material possessions, which have utility and may be appropriated exclusively and also exchanged. It is an old, but erroneous idea, that money only is wealth, but this idea still lingers in the minds of many.

Money is the accepted measure of all values, but is a very small portion of wealth. Wealth is closely allied to value because value is the measure of wealth, hence if possessions, however vast, have no value, they have no wealth. Wealth is also related to price, and the price may in some instances be either above or below the value, and in either case wealth is either increased or decreased. Wealth is also related to cost as the value and price of possessions are usually estimated according to the cost of production, that is the time and labor, either skilled or unskilled, which have been expended upon the production.

Production of Wealth

Historically, there are five stages or periods in the production of wealth, the hunting, fishing, pastoral, agricultural and stationary periods. The hunting and fishing and pastoral stages are where wealth consists mostly of the natural productions of the earth, such as animals, fish and fruits. In the hunting period which is the first, man requires less facilities and less exchange for the products of his labor.

This is indeed the primitive condition of man.

The fishing period is an advance upon the hunting period, because it requires superior facilities, but most of all because it leads to exchange of products.

In the pastoral stage, men begin to divide off in tribes, take possession of tracts of land, accumulate flocks and herds, and here at once is seen a great variety in the equality of possessions.

After the Middle Ages, when agriculture rapidly increased, various handicrafts were developed and skilled labor was in demand, but when machinery began to supersede handicraft, and when capital began to furnish increased facilities for the more rapid production of wealth the question of a division of labor assumed great prominence.

The stationary periods are indicated by the settling down of the nomadic tribes, the building of towns and cities and the organization of states and nations.

Practically there are three necessary factors in the production of wealth; the bounties of nature, such as land and what it produces, water and air; and labor bestowed on the bounties of nature; and capital which supplies (not creates) the bounties of nature, furnishes improved facilities for labor, and in the meantime supports the laborer, and in the best condition of society, these three factors work together harmoniously.

Production creates utility, not new matter. The bounties of nature, however, do not long remain free to all, as by reason of custom and law, the possession of them becomes restricted to those who have discovered them, or bestowed labor on them, or purchased them. Homesteads may be secured in the West, by the bestowment of

certain amount of labor on a given tract of land. Hunting and fishing are restricted by certain laws. About the only thing upon which man has not placed a mortgage, or does not lay exclusive claim to is the use of the free air of heaven, and no matter how much of it may be used, nor in what way, there seems to be enough for all mankind, and the only restriction here, is that men must not needlessly pollute the atmosphere, and this is for the public good.

Labor proper, is service rendered by human beings. The service of man is more valuable than that of the horse because of the greater intelligence and independence of man, and not because of strength; hence a man sells for more than a horse. Skilled labor is labor with intelligence.

Labor

Historically there are three conditions of labor, namely, slavery, serfdom and free contract. Slavery is that kind of labor performed without any reward directly for services rendered. Serfdom is that condition of labor in which the laborer is not only the slave, but is more or less attached to the soil, and it was the rule of the old feudal system. Free contract labor is that which is now generally observed in all civilized nations. Labor is the work which man performs on any factor in the production of wealth. It has a great variety of values. In some instances physical strength is the chief factor because one strong man can do the work, but in most instances this is not considered, otherwise a horse in some cases would be more valuable than a man. A horse needs a driver, a guide, while, of course, some men need also an overseer or superintendent, but one man can superintend more men than they can horses. It is then intelligent labor more than physical strength that gives special value to man's labor. Moral qualities also add value to his labor because in such cases the intellect will be considered, and hence the labor more intelligently directed and also better results will follow. Labor in its lowest sense in civilized countries refers to a large class of people who live

by manual labor and simply receive wages. This has always been the condition of civilized society, and perhaps will always continue so. I know it is very difficult to discuss labor without discussing the laborer, as it is difficult to separate the thing done from the doer.

Labor is often divided into common and skilled labor. Common labor is generally of the kind that does not require much previous apprenticeship. Again, it does not require a high degree of intelligence to perform it, and again, also, any loss of material by reason of his lack of skill or intelligence does not generally result in so heavy a loss to the capitalist who supplies the materials because the amount of labor previously done on an article before it comes into the hand of the skilled laborer renders the material upon which he works of more value than the crude material. Hence for these and other reasons, the skilled laborer is paid higher wages. Skilled labor may be called also the labor of the artizan and the machinist, and these are also capable of being greatly subdivided.

After all, labor is valuable only as it brings good results, or in other words as it produces wealth. One of the great advantages in the production of wealth in these times is the division of labor. By this means instead of as in former times one man finishing the whole piece of work, a particular part is assigned to one man and in the production of which he thus becomes very skilled. Thus the work of ten men divided will turn out more and better work than each man completing the entire work. This division of labor is now observed in law and medicine and all the learned professions.

As an illustration to make a pin by hand originally required fourteen distinct operations, not to speak of making the wire, but now one machine does it all, even to sticking the pins into the cushions or paper.

CHAPTER XI

ART AND MUSIC

Art is the embodiment or expression of esthetic feeling in human production. Theoretically it is a systematic collection of principles or rules by which a certain result may be obtained; practically it is the systematic application of these principles or rules in producing desired results. The Romans had two classes of art, the liberal arts, embracing the higher branches of education which freemen only were permitted to pursue; and the servile arts, embracing the various trades which were practiced by slaves only. An old division of the arts was the useful and the ornamental arts which division, however, is now generally discarded. Utilitarian ideas are now much more liberal and comprehensive than in former times. Man is considered to be more than a beast; he has a soul; he needs to do more than dig in the ground; he needs to look up to the stars. Is it not useful to gaze upon the marble statues of the world's great men whom we have or have not seen in the flesh? Is it not useful to view with wonder Raphael's transfiguration of Christ? Is it not useful to listen to the rendering of Handel's Messiah, Mozart's Requiem or Beethoven's Prayer? Yet that old definition would say that the effect is only ornamental.

Others have made three divisions of art: the mechanic, the liberal and the polite arts, but it will be observed upon a moment's thought that even these divisions are not clear distinctions, for they are all more or less mechanical, polite and liberal. The mechanical arts are such as embrace the various forms of manual skilled labor; the liberal arts

are such as refer to the various phases of educational life; and the polite arts are such as are now known mostly by the expression, fine arts. And the polite or fine arts are also divisible into two classes, such as are recognized by the eye, as painting, engraving, sculpture and architecture, and such as are recognized by the ear, as oratory, poetry and music.

As to the relative merits of the fine arts there will always be a difference of opinion among men corresponding largely to their difference in esthetic feeling and culture. The mechanic may think that he hears more music in the squeal of his plane or the buzz of his saw or the ring of his hammer than in the sweet tones of the best violin. To him a violinist is a foolish man who is simply drawing some horse hair across some strings stretched over a box! To him that is nothing but a foolish waste of time! The engineer or farmer boy may think that there is more music in his whistle than in the best silver cornet in the best orchestra. The good old housewife would not give the musical hum of her spinning Jenny for the most melodious song of a Jenny Lind! And the father may rather listen to the morning and evening song of the old family tea-kettle than to the most beautiful notes of the best cabinet organ! To some, playing the piano is but thumping and is not of much practical value. To some music has no value whatever. I wonder if such persons do not sometimes wish that the music of the deep seas roar might cease forever, and that all the musical instruments might be split into kindling wood; that all the choirs might be sent to—no matter where, and that all the warblers of the forest might be strangled to death for disturbing the public peace! Now, if the seas and the winds and the birds and the people were to suddenly adopt this sentiment would we not have a still world? Not a bird in our forest to warble, not a lady in our parlor to sing, not a flute, fife, horn, organ or piano to play! Why the people would think it were the world's funeral day! Yea worse, for we sing at funerals! O give us good music and joyful song. The Lord has filled the heavens

above us with the choicest songs and celestial minstrelsy and the air around us is vibrating with music, and let us make earth as much like heaven as possible.

> The man that hath no music in himself
> Nor is not moved with concord of sweet sounds
> Is fit for treasons, stratagems and spoils,
> The motions of his spirit are dull as night
> And his affections dark as Erebus,
> Let no such man be trusted.

Schelling calls architecture frozen music.

There is something in sculpture that fills us with awe and reverence. When walking among nicely shaped busts and chiseled statues there is a feeling comes over us kindred to that when we are in the house of the dead. I remember when looking upon the statuary on exhibition at the Columbian Exposition as I moved among the marble statues of the world's great men of the past and the present and saw there Homer, Apollo, the Centaurs, Shakespeare, Milton, Clay, Webster and Lincoln, that I felt much as if I were moving among the shades of the departed and every word should be spoken in a solemn undertone. But it is the province of painting to inspire a more lofty feeling; and perhaps it is so because it is more like life than death, and yet no one of the fine arts inspires like music. It is more independent, ethereal and spiritual than any of the fine arts. Sculpture is dependent upon the mallet and the chisel; painting is dependent upon the paint and the brush; but music has a power as independent of words as are the smiles of joy or the tears of gratitude; these indeed give eloquence to words, but require no words to render them eloquent. So music gives eloquence to words, but is eloquent without words.

But some may be curious to know what we have to say about the origin of music; what circumstances gave it birth, what tongue sang the first note, what heart first felt its power? To answer these questions is certainly no easy task. Its origin, however, like the origin of the other fine arts is not marked by any striking fact or incident in history, but like the origin of all the sciences it is rather a development from small and unnoticeable events

or facts than a sudden knowledge of its principles by any one individual. Darwin says, "I conclude that musical notes and rhythm were first acquired by the male or female progenitor of mankind for the sake of charming the opposite sex." And we confess that there is strength in his analogical reasoning by which he arrives at this conclusion. Herbert Spencer says man acquired this art by observing the cadences of emotional speech. This, of course, implies that he had speech before he had music; and if we are to suppose that he acquired speech himself, then we conclude that his music existed before he acquired speech, for our emotional precedes our intellectual development. But if man was created with the full use of language, then music came afterward unless we conclude that music was also a part of his natural endowment. We rather conclude that man was not created with but developed both language and music; he developed the latter by observing the cadences of his own voice.

Music is as natural to man as it is natural for the cat to purr or the lion to roar. Man took as his elements the open vowels or those sounds expressive of emotion, then by prolonging or shortening the sounds he found he would express pathos, joy or anger or any of the emotions of his nature. But the real origin of music is lost among the hazy labyrinths of its own antiquity. This fragment of fabulous Greek history is at least of interest if not of much real merit. In those early times there were some beautiful mountain nymphs who used to discourse such sweet music through the mountain forests as to enchant the inhabitants, and at one time some of them stood around the grave of a loved one playing and watching until they were all transformed into poplars or weeping willows. Who can tell but that this is a vague tradition of that Edenic time when upon our mountain tops might yet be heard the songs of the angels and the virgin earth still rang with the footfalls of our God? May it not be that man took his first lessons in music under the instruction of the angels who were his daily companions in the Garden of the Lord? But let its origin on earth be what it may, its fountain head is in heaven, its liquid stream has come down to earth, but its ocean lies in eternity. Heaven

is its store-house, earth is its resonant gallery, and our music is but the counter-part of angelic song; they have the body of the tune and we have but chimed in with the distant chorus, and it was designed that after we have passed our brief quarter of lessons on earth then to join with the angels in the grand oratorios over a world redeemed to God.

The history of music is very extensive and much diffused, and it is very difficult even to group the most salient points in that history. We have already referred to the probable origin of vocal music, but what shall be said of the origin and history of instrumental music? Very likely the wind blowing into broken reeds as they stood up stiffly in some low marsh land or river may have suggested the first rude pan-pipe of which the flute is, but a modification. Dry sea weed stretched on rocks or shells may possibly have been the primitive Aeolian harp from which have come the lyre and guitar. So also as to the origin of other instruments. Wind instruments made of reindeers' horns have been found among the debris of the stone age and hence belong to pre-historic times. Nearly 3,000 years before the Christian era the first Emperor of China is said to have invented an instrument of music made of strips of wood over which silken cords were stretched, and it was played with both hands and its sound was said to calm the passions and inspire virtuous sentiments. The various kinds of drums are the most universal of all kinds of instruments; and they appeared most suited to the savage life and most pagan gods were supposed to be delighted with the batter and bang of the gongs of the worshipers.

The first instruments of music mentioned in the Bible are the harp and the organ. And going to the heathen world we will perhaps find first the pipe, the flute or the horn; and as the first tribes were nomadic it seems probable that they would first use the shepherd's pipe or the hunter's horn. The histories of vocal and instrumental music seem to run parallel with each other, for when ever we find the one we find the other also. Perhaps man first formed some idea of a scale from his own voice and then for greater power tried to make some instrument to har-

monize with his voice, but if the formation of the scale had been left to some people it would not have been formed to this day, for they cannot follow the scale when it is formed. Indeed what a trying thing it is to teach some people to sing. A celebrated leader of a band once had a trombone player of great lung power by the name of Perkins. The leader cautioned every one to be careful to mind the musical marks. There was in it one sweet strain marked pp and coming to that Perkins put out all his great lung power. The leader stopped them and reproved Perkins, but he replied that he had played according to his book; and when the book was examined by the leader he asked what pp meant? Perkins replied why, of course, it means put in Perkins! The histories of vocal and instrumental music are so nearly always blended that we will not attempt a separation, for the influence of the one is mostly attended by the influence of the other. Only a few of the multitude of facts can we mention here. Its first mention in sacred history is in the 4th of Genesis, where Jubal is spoken of as the father of such as handle the harp and the organ. And how curiously has the name of this musician been handed down to this time? His name in some form, it is said, can be found in almost every language. The Hebrew had Jubilee, we have Jubilant, Jubilate and also Jubilee! And the latest mention of his name was near the close of the civil war when it was said of the slaves as they saw the Lincoln gun-boats coming they shouted "the Jubilum am come"! We thought that a strange word when we first saw it, but it is the exact Latin word for Jubilee. And if Jubal was the inventor of the harp and organ (but a mouth-piece, however), as the Bible seems to indicate, his name is worthy to be perpetuated to the latest time. David was a cunning player on the harp; and Miriam, the sister of Moses and Aaron, sang and played at the triumphal march through the Red Sea. It was at the sound of the ram's horns that the walls of Jericho fell down. All through the Old Testament economy in the choral service, voices and instruments were employed, and they had a great variety of instruments. The Talmud speaks of an instrument used about the beginning of the Christian era in Jerusalem, called

Magrepha, and it had ten pipes and one hundred different tones, and when played the tones were so powerful that the people in their homes could not hear each other speak. Some say this was rather a large drum, and others say it was a large fire-shovel used at the fires burning the sacrifices and when done was thrown down violently and the sound let the people know when the time of sacrifice ended. Josephus makes this wonderful statement that at a certain Jewish performance there were engaged 200,000 singers, 40,000 sistrums, 40,000 harpers 200,000 trumpeters. What now of Gilmore and Wagner with their anvil choruses!

Hindu Music

Among the Hindus music has been treated as a fine art, and its history dates as far back as their history, mythical and real, leads us. The goddess of Speech and Oratory, the wife of Brahma, brought this art down to man and gave him also his first musical instrument called the Vina. It had four strings and resembled a guitar, and it was made of a large hollow bamboo with a large hollow gourd at each end. The tone was both delicate and full and the music composed for it was both rapid and brilliant. They have had also from time immemorial a three-stringed violin, so that Raphael and Tintoretto did not commit an anachronism, as some have supposed, by painting Apollo having a violin, thinking this instrument of much later origin.

Chinese Music

The Chinese Musical? Many have supposed them the most inanimate people in the world, but on the contrary, their musical history is found to be superior and like most heathen nations, they ascribe the origin of music to supernatural beings, and its history is finely interwoven with their mythical history. In authorship on this subject they are certainly not deficient, while in the Imperial Library at Pekin are found 482 volumes on music. Chinese authentic history begins with Fo-hi, the founder of the Empire about 2,250 B. C. He invented the kin, a stringed instrument, the various parts of which symbolized many

things, and it was supposed to have great power. Indeed in an important sense they make this science the foundation of all their sciences. One of those early emperors ordered a certain man to develop music, and to do this he went to the northwest of China and cut a bamboo and removed the pith and blew into it and the sound was the exact pitch of the human voice. Thus was discovered the fundamental tone. He found also that the notes of birds and the bubbling of waters were in exact unison with his new made reed. In listening to the songs of the male and female birds he discovered six different harmonic sounds, and from these he formed the scale. One of those early writers gives some sensible advice, such as music should follow the sense of the words, it should be simple and unaffected. Music is an expression of the soul of the musicians. Confucius was a great lover of music and an excellent performer, and once while he was performing some grand music, a passer by remarked, "Surely one who can play thus must have his soul occupied with great thoughts." In his latter days of extreme poverty he sang and played much as usual, and when asked how he could do so he replied, "The wise man seeks by music to strengthen the weakness of his soul. The thoughtless uses it to stifle his fears." Under the reign of Tchin or Tsin, after whom China was named, all the sciences and arts except agriculture and medicine were severely proscribed. All musical instruments were destroyed or remodeled, and the musical bells were melted and formed into collossal statues. Science, he claimed, was opposed to true progress, and it was this emperor who built those famous walls. The next dynasty, however, endeavored to restore all the sciences and succeeded to a gratifying degree. Music at the emperor's court became very fashionable, and at one time, A. D. 280, one of those emperors employed 10,000 women, all proficient singers and performers. When traveling they were accompanied by a large number of these musicians, sometimes as many as 500 attended them. Their system teaches that there are eight different sounds in nature, the sound of tanned skin, of stone, of metal, of baked clay, of silken strings, of wood in percussion, of bamboo and calabash or gourd, and

from these materials most of their instruments are made. They have eight different kinds of drums ornamented in endless variety. So far as I know this is the only people who have succeeded in getting music out of a stone, and this rough stone is found near mountain streams and will polish like agate. When this instrument is ready for use, it is said to resemble a clothes horse on which is suspended sixteen carpenter's squares which are struck in rapid succession with a wooden mallet, and it is said that when these faces and angles are changed in the least the melody or harmony is lost and can never be restored. European music was introduced in China by the Jesuits in 1678, but never became popular.

The music of Japan is so nearly the same as that of China as not to need any special notice, but it should be mentioned, however, that in every respect it is inferior. Turning but for a moment to savage nations we will find

> Music the tender child of rudest times.
> The gentle native of all lands and climes
> Who hymns alike man's cradle and his grave,
> Lulls the low cot and peals along the nave.

When Cartier, the discoverer of the St. Lawrence river, sailed up that river in 1537, he heard the savages singing a rude song in which was distinctly heard the word Alleluia, and this being a Hebrew word, some suppose them to have been a part of the lost tribes of Israel. The war dances and camp fire songs of the North American Indians are too well known to need but the reference to them. The Kaffir of Southern Africa is a perfect time keeper, but knows but little more about music. Like a great many who are not savages, he thinks that loudness is the chief excellence, and hence when he has yelled as loud as he can he strikes his sides with his elbows which literally knocks the noise out of him.

The Bushman has a string of bells or rattles around each ankle, and he stands on one foot and shakes the other and changes when wearied and thus he shakes the music out of the bells.

Sir Samuel Baker says the natives of Africa are so

fond of music that he believes that a London organ grinder could pass through Central Africa not only unharmed but followed by an admiring crowd.

When Stanley was about leaving Africa for his native home, the natives gave him a farewell concert. After the dance was ended they all dropped on their knees and in a sorrowful refrain sang an improvised song:

Oh, oh, oh! the white man's going home
Oh, oh, oh! is going home
To the happy island on the sea
Where the beads are plenty, oh, oh, oh!
Where the beads are plenty, oh, oh, oh!

This is much like our plantation songs. Music has a power thus for all nations.

Warriors she fires with animated sounds,
Pours balm into the lover's wounds,
Melancholy lifts her head,
Morpheus rouses from his bed,
Sloth unfolds her arms and wakes,
Listening envy drops her snakes,
Intestine wars no more our passions urge
And giddy factions bear away their rage.

Egyptian Music

Among the hieroglyphics of Egypt it is said, may be found instruments of music that antedate the birth of Christ about 2,000 years. They ascribe the invention or discovery of the lyre to Thoth, the Egyptian name of Mercury. During the inundation of the Nile a tortoise was floated out and left high and dry there to die. After the water had receded Thoth wandered along the banks and found the dry shell with the dry tendons stretched across it and accidentally striking it with her foot it gave out beautiful sounds. This led to the construction of the lyre, and this lyre had three strings representing the three seasons of Egypt. The deepest string represented the wet season, the middle string the growing season, and the

other the harvest season. Their musical scale had seven tones, representing the seven planets known to them.

Their earliest song was a funeral march sung at the death of the son of their first king and this song was known after this among the Greeks and Herodotus, not knowing its origin when traveling in Egypt was very much surprised to hear it there.

The musicians were not permitted to transmit their knowledge from father to son and were never permitted to change their occupation and all of them were required to reside in the same ward or quarter of the city. Every body sings while at work! While threshing out the grain they sing:

Thresh for yourselves oh! oxen
Thresh for yourselves,
Measure for your masters,
Measure for yourselves.

Once while 172 men were engaged in removing a large statue from the quarry, one man was seated on the statue giving the time in a refrain in which all were to join something like the sailors' hauling away at the ropes. A harp about 3,000 years old was found in a stone tomb, and when the strings were restored gave out the old strains so long silent. The ancient Egyptians were a musical people.

Greek Music

The Greeks evidently borrowed their music mostly from the Egyptians as they did most of their arts and sciences, and they ascribe the invention of the lyre to Mercury and make Apollo the god of music. Of all the ancients the Greeks have the reputation of being the most musical, indeed, in esthetic culture of all kinds they excelled. Their system of notations was by placing the letters of the alphabet in different positions—straight, sideways, diagonal and circular and so on. Play on the piano the first seven letters of the alphabet, and it is said you have the Greek octave diatonic scale. Contrary to our usage he played what he called his highest note on his

longest string. But it is a singular fact that only three Greek hymns set to music have come down to our day and copies of these hymns do not date farther back than the fifteenth century.

The musical contests which took place at the Grecian games led to a rapid improvement in music. Pollux, who was of giant size, and who slept on a bear skin in imitation of Hercules who slept on a lion skin, is said to have gained seventeen victories as a trumpeter. He could play two trumpets at once and these trumpeters and flutists were proud of bursting a blood-vessel in their efforts to excel each other and to amuse and gain the applause of the people. Terpander was the great musician among the Spartans, and by his power he is said to have quelled all dissension in Sparta. Most of his music was in marching rhythm and used in time of battle. Stesichorus was the founder of the Greek chorus, and a statue was erected to his memory. Polycrates, the sea-king, had a choir of beautiful boys whose duty was to sing sweet Lydian music while the king ate his meals.

Sappho was a leader in musical culture and poetry, and she had a large number of pupils, and indeed it would seem as if she stood at the head of a conservatory. Solon was very much affected by one of her songs and expressed the wish that he might not die before he committed one of them to memory.

Anacreon introduced into Greece a light kind of song in praise of women, wine and love. Pythagoras, who coined the word philosopher which took the place of sophos (wise) was the first to critically investigate music as a science. His maxim was, All is number and harmony. He believed that mathematics should be the guide to music, and that the universe itself was constructed on a musical plan, and he was probably the first to introduce the theory of the Music of the Spheres, and how persistent has been that belief? Shakespeare sings:

> Look how the floor of heaven
> Is thick inlaid with patines of bright gold?
> There is not the smallest orb which thou beholdest
> But in his motion like an angel sings,
> Still quiring to the young eyed cherubim.

And Milton also says:

> Ring out ye crystal spheres,
> Once bless our human ears
> If ye have power to touch our senses so;
> And let your silver chimes
> Move in melodious time
> And let the bass of heaven's deep organ blow
> And with your ninefold harmony
> Make up full consort to the angelic symphony.

Even Tennyson says in his Ode to Memory:

> Since she was nigher to heaven's spheres
> Listening to the lordly music flowing from
> The illimitable years.

After all, this theory may not be so much a fancy as we may have supposed. It is known that vibrations of less than sixteen to the second are inaudible, being too low for the human ear to catch, and that vibrations above 38,000 in a second are also inaudible, being too high for the human ear to perceive, and the fact that we do not hear this music of the spheres is not a proof of its non-existence. A bullet or a cannon ball makes music as it flies through the air, but it is most enjoyed when the farthest off. These celestial balls flying with such wonderful and diverse velocity in the heavens must make up a celestial orchestra whose music rolls like waves of moving light along the cerulean archways of creation's vast and magnificent temple.

Pythagoras established a very rigid music school in which no one was permitted to sing under five years of study, and when graduated, or rather admitted, each was clothed in white in token of the purity of song. Each pupil was required to soothe himself to sleep by the use of the lyre, and also to strengthen himself for his duties in the morning in the same way.

Here is a crumb of comfort for those who are not musical. At the banquets in Athens it was expected that every guest would take the cithera and chant or play a song, original or otherwise, and when the cithera was

handed to Themistocles he was unable to proceed, and when the guests were jeering him he replied, "It is true, I do not know how to play the cithera, but I know how to raise an insignificant city to a position of glory." Now we give an item somewhat severe on the professionals. An Athenian once played to Dorian, a representation of a storm at sea, and then asked him how he liked it, he replied, "I have seen a better storm in a pot of boiling water." Thus a tempest in a teapot is over 2,000 years old. Here is an item for composers. At a mule race in Athens the rider applied to Simonides to write him a triumphal ode, and he replied, "I don't sing about mules." But being persuaded, he adroitly began by speaking of the mule's better lineage thus: "Hail! O ye daughter of the stormy footed horse."

One of the most popular of the Grecian poets and musicians was Pindar, whose services were sought for by many a king and prince. The tragedies were a kind of songs whose composers and performers were often rewarded by the presentation of a goat, indeed the word tragedy is from tragos, a goat and ode a song, hence a tragedy is a goat song. Wonderful music has a goat! Here is an item for the musical director. In those early times he did not as now use the baton, but he wore a pair of heavy iron shoes with which he marked the time. We read of blind Homer wandering through the streets reciting his poetry and song, and we hear of Orpheus with his magic power entrancing mountains, trees and stones until they follow him.

> **Music hath charms to soothe the savage beast,**
> **To soften rocks or bend the knotted oak,**
> **I read that things inanimate have moved**
> **And as with living souls have been informed**
> **By magic numbers and persuasive sound.**

It is said when Orpheus struck his lyre the lurid crest of the serpent fell, the mane of the lion ceased to bristle, and the eye of the tiger ceased to glare. By the use of the lyre Amphion made his contemplated city rise up before him, and form itself into shapely and stately man-

sions. One Arion who when about to be thrown overboard, asked the privilege of playing one more tune, and taking his stand on one of the rowers' benches played one of his sweetest tunes which called up a dolphin, and seeing it he threw himself overboard and the dolphin kindly taking him on his back carried him safely back to his native city.

Roman Music

Early Rome was not musical, but in her later days, however, some schools for music were established. The flute players formed a mutual protection society, and they were in the habit of taking their meals in the temple of Jupiter from which they found themselves one day excluded. And like some ancient choirs (of course none of them are living now), they got angry and not only refused to play but even left the city and went to a neighboring village. The Romans went after them and tried to persuade them to return, as they could not conduct the services without them; but they were stubborn and would not return. The villagers gave them a banquet at which they all got drunk, and the Romans came and took them back, and when they became sober they concluded to remain. That is the first choir trouble I know of, but it is not the last.

The organ was first used in Rome about A. D. 100, and this hydraulic organ is said to have been invented by Ctesebius, of Alexandria, about 250 years B. C. They were not numerous in Rome, however, until about 300 years later. They were used in the amphitheater and were of powerful tone. Unlike Greece, ancient Rome had no eminent musical composers. The return of a conqueror was largely a musical ovation. Under the Caesars it was greatly improved, and it is said of the Emperor Julian that he endeavored to antagonize the Church by reforming the sensual music of Rome and make it superior to the songs of the Christians, but he died before he succeeded, but no ancient Roman figures more prominently in music than Nero. He studied this art while quite young and took great pains to cultivate the power and tone of his voice. He would lie on his back a part

of each day with a heavy sheet of lead on his chest in order to increase his lung power. He took care to keep his stomach in good condition and never indulged in eating fruits or pickles. He delivered all his addresses by proxy for fear of spoiling his voice and on all occasions he had his voice-master with him to caution him against abuse of his voice, and he was never more happy than when attending to matters relating to music. He first appeared on the stage at Naples and while singing, the theater was shaken by an earthquake, but he was so enraptured with his own performance that he sang on to the end of the song, and no sooner were they all out than the theater fell in with a great crash and Nero praised the gods for his escape. He became very popular, and for one engagement he was offered a sum equivalent to $37,500.

Some of his performances would last a whole day, and you ask how he could hold his audience so long? Besides his attraction he usually had the door locked, and they were compelled to remain, but some of the people, we are told, became tired of his vanity and would leap out of the window, and others feigned to faint that they might be carried out. He was determined to have applause from his audience, and for this purpose he stationed soldiers in the audience to compel the people to applaud him vociferously. When he saw Rome in flames he hastened to the theater and sang, The Destruction of Troy, and hence the proverb, Nero fiddled while Rome was burning. He took a tour through Greece and appeared in contest in their theaters and he won by flattery and bribery. At one time his opponent could not be bought, and his soldiers fearing Nero's defeat drove the contestant to the wall and killed him and took the prize. He brought home 1800 prizes. At last his entire army turned against him and called him That pitiful harper. Almost his last words before his suicide were: "Alas! what an artist the world is now to lose." Was ever vanity greater! It having been arranged by himself 500 musicians celebrated his funeral obsequies.

CHAPTER XII

CHURCH MUSIC AND MUSIC POWER

Eusebius says that St. Mark taught the first Egyptian Christians how to chant their prayers, and Chrysostom affirms that the Apostles wrote the first Christian hymns. The early Christians did not copy so much from the difficult Greek music as from the simpler Jewish chant. At the evening meal the twenty-third Psalm was usually chanted, and when at their agapa or love feasts, the water was being passed, they either sung from the Scripture or an original hymn or song, and the best of these original hymns were preserved and repeated on following occasions and became the songs of the early Christians. No doubt the Hebrew Psalmody was also continued for some time. The younger Pliny A. D. 203, spoke of the Christians as meeting before sunrise on stated days and singing in turn verses in praise of Christ as God. In the days of Origen A. D. 250 all the congregation sang together, and Chrysostom says, Young and old, rich and poor, men and women, slaves and citizens, all of us formed but one melody. This congregational singing was abolished by the Synod of Antioch, A. D. 379, and only men were allowed to sing. The council of Laodicea A. D. 481, ordained that only the clerks should be allowed to sing during the service. Pope Sylvester I., A. D. 320, established a school for training singers in Rome and he gave the choir a gallery and brought in sculpture and painting after the pagan drama.

In the Syrian church was one Ephraem Syrus now called in the East the Harp of the Holy Spirit. He was con-

verted at 18, and became a great hymn writer and composer of music. He wrote on the Nativity, Paradise, Faith and the Church and many of his hymns have been translated by German authors. St. Ambrose, bishop of Milan, took an active part in the development of music, and he copied more from the Greek style of music than any before him had done, and he especially endeavored to reform the method of singing hymns and anthems. He composed many beautiful hymns and chants and the composition of Te Deum Laudamus has been ascribed to him, and also to others, but its real author is unknown.

The next great author was St. Gregory the Great, the author of those chants which bear his name. He founded a music school in Rome of sufficient size to occupy two large edifices and he abolished the Greek nomenclature and substituted the first seven letters of the Roman alphabet as we have them at this day. So highly was Gregory venerated at Rome that one of his music books was chained to the altar of St. Peter to fix the standard of tone forever. From Gregory to Charlemagne, that is from 500 to 900, a period of about 400 years very little progress was made, this being the period of the dark ages.

Charlemagne, a great lover of music gathered about him a large number of literary and musical friends and he was so skilled in music that he often conducted the court music in person, but in church music he was not skilled and he requested the pope of Rome to send him music teachers and the pope sent twelve, the number of the apostles, but he was not pleased with their singing and he had the pope to recall them, and the pope punished them for their failure or treachery, as it was supposed that they did not wish to teach their songs to that people. Other masters were sent and thus the French music was made to conform to that at Rome. Heubald, a monk in Flanders, born about 840, made the first practical effort to fix notes permanently, and we owe to him the germ of the idea of the modern clef and staff, but others before and since have laid claim to the honor of this invention.

We must here mention another important name of those early times, Guido of Arezzo. He devoted himself specially to reading music at sight. He lived about 1030,

and an author says his work has had more influence in shaping modern music than any before him. He seemed especially interested in training choirs and developing church music, and he said, "At the service of God it too often sounds, not as if we were praising Him, but as if we were quarreling and scolding among ourselves." The convent, however, because of his severity (I wonder if music teachers have always been cross) ruled him out, but the pope called him to Rome to take charge of his choirs.

The songs of the Druids, the original inhabitants of Wales, have gone into oblivion, but the songs of the Welsh bards have come down traditionally to this day. These bards were divided into two classes, poets and musicians, and each of these also were divided into three classes. The first of the poet bards were prophets and diviners, the second were to chant the virtues of heroes and the third wrote the national annals and prescribed the laws of social life. The first class of musicians were harpers and were called Doctors of Music, the second played on stringed instruments and the third were singers. It required nine years to acquire the highest degree in the art.

The Irish claim to be the founders of the Welsh bard system, but it seems more probable that the Irish borrowed from the Welsh. The early Irishman had an aptitude in performing on instruments of music, it is said, not found in any other nation. These bards were sorely persecuted, especially during the reign of Elizabeth, who caused them all to be arrested and executed because they were supposed by their songs to foment a rebellious spirit. The harp was the national instrument in Wales and Ireland.

The Scottish and English bards were similar to those of Ireland and Wales.

Troubadours and Minnie Singers

The rise of chivalry in the Middle Ages marks a new era in music. Woman was suddenly elevated from a low condition to be almost worshipped, certainly to be highly adored, and hence arose the troubadours and minnie singers, and many of these were knights who exerted them-

selves to their utmost by the use of poetry and song to pay homage to woman. These troubadours originated in the south of France, but spread rapidly into different parts and they composed and sang their own songs, but the accompaniment was given by hired musicians. These were mostly love songs and sung to married ladies in praise of their charms and beauties, and severely satirized the graces of all other dames. Their good husbands often encouraged these flatteries, but sometimes they awakened a green-eyed monster and murder followed. These love singers went from court to court and moved in the highest circles and were greatly sought after by the fairest ladies of the times, and even kings and nobles became troubadours and they often received munificent gifts, such as richly caparisoned horses, but this style of music was at last run down by a low class of jugglers.

The minnie singers originated in Germany in the latter part of the twelfth century, and these, too, were simply love singers. In grace and diction their songs were superior to the troubadours, and they played their own accompaniments on the viol. They originated and revived many fables, tales and sayings, some of which have come down to our day, such as the following:

Don't set the wolf to guard the sheep.
Never borrow trouble.
The king must die.
And so must I.

The music of the songs, We wont go home till morning, and also He's a jolly good fellow, was as popular then as now, and the latter was a favorite in the time of the Crusades and resounded before the walls of Jerusalem.

With the commencement of the Reformation the music of Germany was greatly improved, and this largely through the personal agency of Luther, who was both a correct composer and a skillful performer. The night before he was to appear before the Diet of Worms to make his great defense of Protestantism he spent the most of that night playing on his lute in order to give composure and firmness to his thoughts. His high estimate of music is expressed as follows:

"I am not ashamed to acknowledge that next to di-

vinity there is no study which I prize so highly as that of music." It is well known that the Wesleys were great poets and musicians. John Wesley urged his ministers to preach frequently on singing and exhort every one in the congregation to sing. He published several works on music and some of them were adapted to musical instruments.

Of Handel, to whom the musical world owes much, it is said he had both a temper and an appetite equally frightful, and when he came in contact with conceited singers there was sure to be trouble. He could not bear a pretending musician. He once had in his employ a young lady who had the sweetest of voices, but a most violent temper; of course there would be an explosion. She refused to sing the part assigned her, and Handel rushed for her to throw her out of the window, and she quickly said, I'll sing. Rossini had also his troubles. A man sent him a miserable opera which it was his duty to set to music, and he retaliated by writing a miserable score to the words. In the overture during the allegro he marked so that the violinists stopped at each bar and tapped the shades of their tin lamps with their fiddle bows, at which the audience almost literally brought down the house. Without mentioning other worthy names, it must be admitted that modern Rome has been the center from which this and all the arts have radiated.

The Italians are the inventors of some and the perfectors of most of the instruments of the modern orchestra. The resources of these instruments were developed in Italy, and the earliest great performers on them were Italians. Not only were the oratorio and opera born and and bred in Italy, but the same authority says every distinct form of musical composition, instrumental as well as vocal is the invention of Italians. This is certainly high praise. Music was first introduced into England from Italy and into Germany and France from Italy. Mr. Billings, a native of Boston, is said to be the father of choirs, singing schools and concerts in the United States. He rendered excellent service to the Colonies during the Revolution by composing songs and tunes calculated to inspire patriotism and urge the colonial soldiers on to

victory. Now we can scarcely begin the catalogue of worthy names of such as have done much to improve and diffuse the musical art. They are among the benefactors of our race and the memory of their names will ever be as fragrant as the breath of morning. Of Handel, again speaking, we may note the following incident. Having occasion to prepare for rendering one of his oratorios in England, he looked about him for skilled singers and players to complete the orchestra and chorus; and one and another having come highly recommended they were all called to practice. Handel says: "Gentlemen, you all read manuscript?" "Yes," they all responded. One man says, "We play in the church." "Very well, play dis," says Handel, as he distributed a piece of music and retired to a distant part of the room and listened a while. Enduring their horrid discord no longer he rushed forward and snatching the music out of their hands he says, "You say you blay in de church? Very well, you may blay in de church; for we read de Lord is long-suffering and of great kindness, forgiving iniquity, transgression and sin, you may blay in the church, but you shall not blay for me." The idea that any kind of music will do for the church should be banished at once and forever. We ought to have the best that can be furnished. What we want is not operatic, not even that kind now fashionably called artistic, but church music. If I may be allowed to offer another criticism it would be this, that we want more of that grand old majestic kind of music of the old German and English style.

We often spoil the sentiment of the hymn by chopping the tune up into fashionable tidbits. I have some where seen in print this illustration. The choir was rendering that portion of the Psalm saying, "He shall be clothed with righteousness," etc. One part sang, He shall be clothed; another sang, He shall be clothed; and another sang, He shall be clothed, and so on until the critic says he was really afraid the poor fellow would never get his clothes on at all. We should be careful not to spoil the sentiment of the hymn by the tune.

Southern Plantation Music

Any treatment especially of the romance in music which did not allude to the negro melodies of the South would certainly be considered very imperfect, as no race is by nature more musical than the negro race. It has been supposed by some that a people given to proverbial sayings is a nation not given to music, as the proverbs are supposed to spring from the intellect and the music from the emotions. We have long suspected that could the proverbs uttered by the negro race, especially those of the Southern plantations, be collected they would equal those of any nation not even excepting the witty Irishman himself.

Some of these sayings have come under our notice, and the following are specimens:

Ole man know All died las' year. Save de pacin mar, for Sunday. Dem wat knows too much sleeps under the ash-hopper, that is lie, you know. Empty smoke-house makes de pullets holler. Rooster makes more racket dan de hen wat lays de egg. Nigger dat gets hurt worken ought to show de scars. One-eyed mule can't be handled on de blind side. You can hide the fire, but wat you gwine to do wid de smoke?

But this race is musical as well as proverbial. True, but few of the race have yet risen to very marked distinction in this art, yet it is considered a characteristic of the race to be musical. You can find many white people who cannot sing, but it is very rare to find a colored person who cannot sing. It should be remembered, however, that many of the songs known as negro melodies are but the compositions of white men, and were never known among the colored race at any time. A collection of pure native melodies, especially as sung on the Southern plantations in the time of slavery, would be a volume of curiosities worth preserving for coming generations.

A few of these melodies we have collected, but will present here brief extracts. At their religious meetings the following was sung with great enthusiasm:

> Oh whare shill we go when de great day comes
> Wid de blowin er de trumpets an de bangin er de drums,
> How many poor sinners will be kotched out late

En fine no latch ter de golden gate!
No use fer ter wait till ter-morrer!
De sun musnt set on yo sorrer
Sin's ez sharp as a bamboo brier—
O Lord fetch de mourners up higher
When de nations er de earf is a standin all aroun
Who's a gwineter be chosen fer ter war de glory crown,
Who's a gwine fer ter stan stiff-kneed en bol
And answer to der name, at de callin of de roll.
You better come now ef you comin—
Ole Satan is loose en a bummin—
De wheel er destruckshun is a hummin
Oh, come along sinner ef you comin.

The following may be heard yet at some of their camp meetings and is often attended with great emotion:

Oh, de woril is roun en de woril is wide—
Lord member dez chillun in de mornin—
Hits a mighty long ways up de mountain side
En dey aint no place fer dem sinners fer ter hide
En dey aint no place whar sin kin abide
When de Lord shall come in de mornin!
Look up an look aroun,
Fling yo burden on de groun
Hit's a gitten mighty close on ter mornin!
Smoove away sin's frown—
Retch up en git de crown
Wat de Lord wil fetch in de mornin!

They seemed to have known pretty well who were reaping the profits of their toil, hence they sung:

De old bees make the honey comb,
De young bees make de honey,
De niggers make de cotton en de corn
En de wite folks gits de money.

Some of their songs were, no doubt, poor paraphrases on the hymns which they heard sung by the white people. The following is a verse of a hymn which has an application in more places than in the South:

De big Bethel church! de big Bethel church!
Done put ole Satan behine um;
Ef a sinner git loose fum enny udder church
De big Bethel church will fine him.

We prophesy that this race will one day become distinguished for its culture in music, as they already have by nature two most essential elements for success, correctness of time and purity of voice. Their present lack of critical ability will develop no doubt as their general culture shall be improved.

Let us now speak of a few of the most famous characters among the colored race. Elizabeth Taylor Greenfield, popularly known as the Black Swan, was a native of Mississippi, but early in life she was brought to Philadelphia and well educated in music. She made her first public appearance in Buffalo, N. Y., and from thence her popularity as a cantatrice arose rapidly and she was soon called to other cities. She then visited Europe and sang in Dublin and London and at Buckingham palace before the Queen, and from whom she received great praise. She had a voice of remarkable compass, sweetness and power. She died in Philadelphia 1876, aged 68. Another noted character is Joseph White, a composer and violinist, a native of Cuba. In 1855 he went to Paris and became a pupil of Gottschalk, and at a contest in 1856, won the first prize as a violinist over sixty competitors. He was associatied with Rossini and other eminent composers. He went to Spain and played before the Queen from whom he received many valuable presents. In 1867 he was considered the most distinguished violinist in the French school. In 1876 he visited the United States and performed in New York and Boston, and always before large audiences, and then returned to Paris. I need only refer to the famous Jubilee Singers who have sung all over the United States, in Great Britian and on the Continent and were without doubt the most popular troupe of modern times. We must here notice perhaps the greatest musical prodigy of any age, and he is commonly known as Blind Tom. His proper name is Thomas Greene Bethune, and he is said to have played about 7,000 pieces, and played readily any piece he had ever heard. He was of pure Negro blood and was born blind in Georgia, 1849. He began to show signs of musical talent when only two years old, and when four years old a piano was brought to the house, and it having

been left open, the next morning they heard Tom repeating the pieces which had been played the night before. At eight years of age he made his first public appearance in his native city, Columbus, Ga. When between five or six years of age he obtained partial sight, and ever since was able to recognize very bright objects when brought close to the eye. He had performed in most of the large cities of the United States, England, Scotland and France. His secrets of power were a most perfect ear and a wonderful memory, so that he was able to reproduce any piece however difficult without previous study or practice. He had been often tested by musical experts, but never failed. Music in an eminent degree was to him a natural talent.

When Henry Clay was on a visit to the White Sulphur Springs he asked the colored band to play the Virginia Reel, and he was informed that they did not know it. He took the band to one side and whistled in a low tone the music and the band then struck up the music and Clay had the privilege of enjoying his favorite dance.

Power of Music

The sense of hearing in most animals is very acute, and the tolling of a bell will cause many a dog to howl piteously, and the tiny mouse living in the hut of the Alpine herdsman will come out at evening time to listen to his whistle or evening song. In ancient times the grazing herds were attracted and guided not as now by voice, but by the shrill notes of the shepherd's horn. It is well known to showmen that the dull, lazy, inanimate elephant is passionately moved by warlike music, but soft, gentle music soothes him into lamb-like docility and cheerful obedience. The lion, the king of the forest, is easily controlled by music. Some scientific men of London once gave this matter a severe test, and a fine specimen of a lion was caged in the tower of London, and they withheld food from him for many days until he was ravenous with hunger; then a band of musicians was procured and stationed near by, but out of the sight of the lion. A piece of meat was thrown into the cage, and before it reached the floor it was fast in the jaws of the beast. The band

struck up and he dropped his meat and listened. They paused and he at once commenced his meal, and they struck up a tune again and he stopped again and as often as they did this it was attended with like results. Thus was it proved that music had power to attract a famishing beast when the food was just at his mouth. But the horse is especially sensible of its power. We read in ancient history that the Libyan horses would never be handled only when soothed by gentle music. The Sybarites taught their horses to dance to music, and at one time when these horses bore their gallant riders into battle they heard their well-known dancing tune coming from the ranks of the enemy, and the horses at once set to dancing instead of fighting. It is said that the eccentric Lord Holland used to give his horses weekly concerts of music, and during our late war it was more than once observed how well the horses understood the bugle's sound for war, and without word or rein from the rider would fall into battle-line, and although jaded before, they were then full of mettle and rejoicing in their strength. But note the power of music upon man.

Therapeutic Power of Music

From the days of Pythagoras to the present time there have been those who have believed in the therapeutic power of music, and indeed music as a remedy for disease dates from the origin of medicine. The confidence of the ancients in the medicinal effects of music may have been entirely too strong, especially when they claim that it has cured the rheumatism, the gout, the plague, the bite of reptiles and hydrophobia. It was customary in the beginning of the seventeenth century for large bands of musicians to traverse Italy during the summer months to cure the diseases caused by the bite of tarantula, a kind of spider. They had different kinds of music to suit different forms of this disease and there is authority in favor of the successes they achieved.

Burton, an eminent physician, says, "Besides the excellent power it hath to expel many other diseases it is a sovereign remedy against despair and melancholy, and will drive away the devil himself." Instead of fighting the devil

with fire, then let us fight him with music. Another physician, Porta, claimed that instruments made of medicinal plants and trees would give out sounds endowed with therapeutic powers the same as the plants and trees of which they were made. This is certainly the extreme of "Similia similibus curantur." In the early days of electricity a similar idea obtained in Italy. This practice was called "Intonnacture," and it consisted of sending the sparks to the body through a tube in which was placed some medicinal agent and which was supposed to dynamize the spark with the same medicinal force as possessed by the medicinal agent. Recently a Paris physician has discovered different properties of wood by which he has enriched the science of xylotherapy, and his conclusions are very like those of the Italian. A certain French physician gives an authentic account of how his own child was relieved of constant pain and cured of insomnia by the sound of the flute. Pliny had long before claimed that the sound of the flute would cure sciatica, and singing in a minor key was found to succeed well. An eminent musician was cured of a violent fever by hearing a concert in his room. Bourdois relates the following most remarkable incident. A young lady was dying of a fever on the 18th day. All the signs of death were present and Bourdois on leaving the room caught sight of a harp and it occurred to him to make the experiment. An excellent harpist was fortunately at hand, and he commenced playing, and for thirty long minutes no change was observed, but ten minutes later the breathing improved. The musician redoubled his efforts, and a warm glow began to be felt in the cold limbs, the pulse became full and regular, she bled at the nose eight ounces of blood, she recovered her speech and in a few days was convalescent. Buretti declares that music had the power of affecting the whole nervous system so as to give sensible ease in a large variety of disorders and in some cases a radical cure.

Even in modern times in many lunatic asylums music is a standard element in the treatment of many disorders. How much power the mind has either in producing or throwing off disease has never been fully estimated, but

we suspect it much greater than commonly supposed. Relieve the mind and in many cases disease will disappear.

Music exalts each joy, allays each grief;
Expels diseases, softens every pain,
Subdues the rage of poison and of plague,
And hence the wise of ancient days adored
One power of Physic, Melody and song.

There is nothing that so effectually relieves melancholy as music. This was the great torment of Luther's life. He tried different methods for relief. He believed it was caused by Satanic power and in no way could he so successfully chase away this blue devil as by the use of his lute. He believed that the devil hated sweet music as he hated the light and nothing was so successful in baffling the wiles of the tempter as sweet music.

The king of Spain was once living almost without the signs of life in a dark chamber being enveloped in melancholy that had thus far defied all methods of relief. The famous Italian tenor singer, Farinelli, was sent for and the physicians requested him to sing in an outer room which he did a day or two without apparent effect. But at length it was observed that the king was partially aroused from his stupor and became a listener. The next day it was observed that tears were in his eyes; the next day he ordered the door of his room kept open, when at last the medicinal voice of Farinelli effected what no other medicine could accomplish. This is like another account given of a despairing sufferer whose spell was broken by the music which a slave played on a harp.

At last a slave bethought him of his harp;
The harper came and tuned his instrument.
At the first notes irregular and sharp
On him her flashing eyes a moment bent,
Then to the wall she turned as if to wrap
Her thoughts from sorrow though her breast was rent.
Anon her thin wan fingers beat the wall
In time to his old tune,
And in a gushing stream
The tears rushed forth from her o'er-clouded brain
Life mountain-mists at length dissolved in rain.

Schiller says:

> Now such a voice
> Will drive away from me the evil demon
> That beats his black wings close above my head.

It may not be considered therefore strange that David with his harp chased away the evil spirit from Saul, or that the hand of the Lord came upon Elisha at the sound of the sweet ministrel. Dr. Kane writes that while ice-bound in the Arctic seas his men were saved from despair and from probable death by one man having an old violin which he frequently played. Napoleon in crossing the Alps came to a pass where the rocks seemed insurmountable by the ammunition wagons, and having urged and intreated the men in vain to go forward he went to the leader of the band and selecting a piece of music from his portfolio, he says, "Play that," and no sooner was the tune struck up than over the rocks went the wagons and on went the army to victory.

At a critical moment at the battle of Waterloo, Wellington observed that the Forty-second Highlanders began to waver, and inquiring into the cause of this so unusual event, he was told that the band had ceased to play. He gave orders that all the pipes be played in full force, and the effect was magical. The wavering columns rallied and solid and invulnerable as a stone wall they moved steadily forward to win probably the hardest contested field of battle in history. Every important nation has its own national air, and nothing is dearer to the native born than their own inspiring national song. When the Caledonian emigrants pushed off from the shores of Scotland as the bagpipes played in solemn tone, "We return, we return no more," the big tears ran down over their rugged cheeks. The Swiss soldiery weep and tremble if in a foreign land they hear their own song of their lovely milkmaids. The British soldier willingly dies upon the field of battle if he can but hear his national anthem, "God save the king." If the American soldier can hear above the din and shock of battle the glorious "Star Spangled Banner" floating on the breeze, he rushes bravely on

through the thickest fury of the fight, either to a glorious victory or a heroic death.

But let it not be supposed that sacred music has no power to compare with this. It has power to make even a king weep. At one time in London the choir and organ welled forth that old tune, Messiah; there stood George III, surrounded by his numerous courtiers, while the big tears rolled down over his face until his royal robe was spotted with the falling tears. Milton's description of the power of music is without a parallel:

> "I was all ear
> And took in strains that might create a soul
> Under the ribs of Death."

Henry Ward Beecher once said that the Presbyterians preached men to heaven, and the Methodists sung them there. Nothing has been more efficient than soul-stirring song, and we have no doubt that song has sung many a soul out of dark despair into the light of hope. It has cheered the heart and quickened the footsteps of many a weary pilgrim on his way to the Promised Land. I have no doubt that sacred music has borne on its ethereal pinions many a soul to the Paradise of God who otherwise would have gone staggering down the dark stairway to the dark gates of dark despair. We must have as good music in our homes as can be found elsewhere. We must have as good music in our churches as can be heard elsewhere, then will our churches be attractive and powerful for good. We have seen its power elsewhere, let us control and utilize it here. We have seen it cheering men in worldly battles, let it cheer them on in the battles of the Lord.

This art with all its wonderful achievements in the past is, as we think, yet in its infancy; and it is perhaps more so of this art than of any of the other fine arts. It has greater difficulties to encounter, and not the least of which is because of its ethereal nature. Man more readily develops the material than the immaterial, the formal than the ethereal.

But music has been tardy in its progress for another

great reason, viz., that although it is dependent to a large extent upon mathematics, yet it has its greater difficulty in one of the most occult of all sciences, that of acoustics or the laws of sound. Yet despite all these difficulties it has received a more general impulse in these days than in any former period of its history, and as indicative of this, more instruments of music have been sold during the past twenty-five years than perhaps for a hundred years, and never were so many music books published and so many conservatories established as now. Music must now form a prominent part of nearly every public entertainment, religious and secular, and no art has a more grand future just opening up to it than this. Our musical conventions and national jubilees of song and thundering anvil choruses are but faint prophecies of what the future will be, and the time is near at hand when the music teacher will be looked upon as he should be as a public benefactor, and his work will be regarded as necessary, and not useless, as laborious, and not easy, as worthy of all honor, and not dishonor. And the student who gives attention to this art will not be supposed as idling away his time and squandering his father's money; as too indolent to toil or too delicate for anything else! No, he will be thought of as cultivating the highest and purest part of his nature, the emotional, the soul. Not only will these false notions concerning the teacher and the taught be abandoned, but the theory and practice of music will doubtless be much improved. Doubtless the method of writing music will be as much abbreviated as the short-hand writing now abbreviates the long hand, and as the round notes are an improvement over the old fashioned buckwheat notes, and perhaps we will then have figures or points instead of notes of any kind.

The methods of teaching will no doubt be so simplified that the pupil will learn readily in a few weeks that which now requires quarters to complete, and at such a severe tax upon the patience both of the teacher and pupil. And the coming instruments of music will be as much superior in tone and power as are now the sweet notes of the piano or cabinet organ superior to the croaking notes of the accordeon or the grating sounds of the old banjo!

The present rivalry in the instruments must rapidly develop a high degree of perfection. In that near-coming time song also will share in culture in sweetness and in power. There is to be more than one Jenny Lind, more than one Parepa Rosa, more than one Christina Nilsson, we shall have a multitude of them. People will then also learn that in order to make song the most effective and accomplish its highest mission it must be with distinctness of enunciation accompanied by the instrument. It cannot be denied that there is power in instrumental music; that there is melody in the warble of birds, and if they do use words of their own kind would we not enjoy their songs much more if we could understand those words? Who has not said as he has stood by the piano as the keys have been touched by the fairy fingers of the well trained maid, "it almost speaks"? He means that if it would speak his delight would be at its highest pitch, that would be perfection's height. This is natural, this is reasonable. If this is so, then how unnatural and unreasonable is that kind of singing which intentionally smothers the words and amounts to a mere chatter? O how much of the lofty sentiment of sound poetry is thus strangled outright! It is that singing which speaks the words properly and distinctly which will have the greatest power, and power is the result to be obtained. The singing of those men who have thrilled the hearts of the people of the two most enlightened nations of the world, and whose songs have moved more hearts with good impulses than any others in this or perhaps of any other day, have done so largely by the soul they put into the singing and with the distinctness of utterance of lofty sentiment. Simply the tune, then, without the accompanying clear enunciation of the words will be in a degree less effective. It appears then perfectly logical that for song to be the most effective the instrument and the voice must be combined; the voice to speak the words and the instrument to guide and assist the voice, and whatever will produce the greatest and best effects should be desired by all. Persons of evil design have long understood and used this secret of power; hence in most places of sinful pleasure the instrument and sometimes the accompanying voice

are employed to enchant the youth away from the path of virtue. And in this respect shall the children of this world be wiser than the children of light? O, let us borrow wisdom from our adversaries and combine instrument, voice and soul that we may attract and hold and melt and mould the hearts of the people into the lovely image of Christ.

We have seen music like a siren wooing and ruining men, let us see it now like an angel winning and saving them.

Listed into the cause of sin
Why should a good be evil?
Music alas! too long has been
Pressed to obey the devil.

Drunken or lewd or light the lay
Flowed to the souls undoing
Widened and strewed with flowers the way
Down to eternal ruin.

Who on the part of God will rise
Innocent sound to recover?
Fly on the prey and take the prize,
Plunder the carnal lover.

Strip him of every melting measure
Music in virtue's cause retain
Rescue the holy pleasure.

Come let us try if Jesus' love
Will not as well inspire us
This is the theme of those above;
This upon earth shall fire us.

Say, if your hearts are tuned to sing,
Is there a subject greater?
Harmony all its strains may bring
Jesus' name is sweeter.

Jesus the soul of music is,
His is the noblest passion,
Jesus' name is joy and peace,
Happiness and salvation.

Jesus' name the dead can raise,
Show us our sins forgiven,
Fill us with all the life of grace
Carry us up to Heaven.

To music was the world made and to music shall it be dissolved. To music did Jesus come to earth and to music shall he come again. To solemn music we bury our dead and to angelic music shall they rise, and to music shall they be escorted to their homes on high amid the choruses and Hosannas of that musical world.

"Hail heaven born music! by thy power we raise
The uplifted soul to acts of highest praise.

"I would die with music melting round,
Then float to bliss upon a sea of sound.
And as upward I glide
Hark! the harps of God are singing
Hark! the seraphs lyre is ringing,
And the living rills are flinging music
On immortal air."

CHAPTER XIII

MUSICAL COMPOSITION, INSTRUMENTS AND COMPOSERS

Opera

This form of musical composition, as the word indicates, originated in Italy. The text of the opera is called libretto, and the singing is accompanied by instrumental music.

The opera is a modern art since it grewup in Italy at the beginning of the seventeenth century and first made its appearance in Florence about 1600. It is a part of that classic impulse which was given to all art and literature called the Renaissance, in which also a new form of architecture spread all over Europe. The opera originated from a desire of rediscovering the vocal music of the Greek drama.

The earliest known opera was called Eurydice, and consisted of recitative choruses, duets, and trios, together with an instrumental prelude and interludes, and for fifty years this opera remained the luxury of nobles, being performed only before courts during special festivities, but after a while it became a popular entertainment.

Both the vocal and instrumental parts of the opera were soon greatly improved in stimulating solo singing and giving a fine overture, but the later Italian operas do not show much change in any respect.

In France the first operas, those of Sulli at the end of the seventeenth century, and of Rameau, at the beginning of the eighteenth century, were little more than imitations of the Italian style. In fact no improvement was

made until by Gleeck (1773-1787), who confined the vocal part with due limits, and brought the dramatic character forward with greater prominence. He also made the chorus much more conspicuous, and added greatly to the instrumental part of the opera.

The Grand or Classic Opera of the French school had hardly taken first rank, and while this school is characterized by great energy and freedom of movement, yet its success has been chiefly in the lighter kinds, as opera bouffe and opera comique. The chief composers are: Spontini, Meyerbeer, Rossini, Gounod, Thomas, Aubier, Adam and Offenbach.

In Germany the opera is marked by but little national originality, and earliest writers did but little more than carry out the Italian traditions. Mozart was the first great German opera composer, and he succeeded in uniting Italian sweetness of melody with German richness and power, and his operatic music has never been surpassed, if indeed it has ever been equalled.

But after Mozart, the German opera sank to a low level, and it was only brought up again by such eminent men as Spohr, Weber and Marschner who succeeded only when they brought into the opera those brave legendary national subjects of which the German people are nationally proud. Wagner has made his great success because he united the German legends with the vivacity of dialogue and scenic splendor of the French school under Meyerbeer, who was perhaps one of the most brilliant of the operatic composers.

The opera in the United States is rather recent to be said to have a history independent of foreign influence, and it is seriously questioned whether it is holding its place among public amusements.

Oratorio

This word is from the Latin oratorium, and refers to a majestic form of musical composition in which voices and instruments combine to portray scenes and passages from Biblical history. It differs chiefly from the opera, being sacred and not secular, and in being as a rule, un-

suited to stage or scenic representation. Sometimes the oratorio has been described as a sacred opera, but this is not strictly correct, as when the oratorio glides into the operatic, it ceases to be anything but operatic.

The oratorio was born in Italy, but strange to say, has never been popular there. The germs of this form of musical composition were found in the Mysteries of the Middle Ages, which consisted of scenes from the Scriptures rudely dramatized and accompanied by some kind of primitive music, but the design, however, was benevolent, it being to entertain the peasantry and win them from idleness and vicious pleasures.

St. Philip Neri, who was born in Florence, 1515, and who with Ignatius Loyola, had interested himself in the welfare of the Pilgrims, is the first known person to introduce the oratorio into the church. By the assistance of the musical director of St. Peters, he introduced songs in the rendering of those passages of Scripture, especially where dialogue and soliloquy are found. The first authentic oratorio, however, was composed by Emilio del Cavalieri, entitled "Soul and Body."

From this time onward to the time of Handel in England, the master of oratorio, history on this subject seems to be very imperfect. In Paris, it was never popular, being perhaps too heavy and sacred.

Until the time of Handel nearly all the eminent composers of oratorios were Italians, that is running between 1645-1710. Handel's best known works were composed from 1740-1751, and these were "Saul," 1740; Messiah, 1741; Samson, Judas Maccabeus, 1747, and Jephthah, 1751. He was followed by Haydn, whose master-piece, "The Creation," was composed in 1798.

These masters have but one peer in more modern times, and that is Mendelssohn, whose St. Paul, composed in 1836, and Elijah, 1846, are brilliant examples of his talent in this line of composition. Indeed many lovers of music greet his Elijah with more enthusiasm than Messiah, regarding it as more modern, flexible and intellectual. It is more esthetic than spiritual, yet it is purely and thoroughly religious throughout.

Organ

This word is of Greek origin (organon) and is a wind instrument of peculiar range, force and complexity in sound. Its historical pedigree may be traced back to the god Pan, who was the Greek god of flocks and pasturage, and a son of Hermes by some nymph. He was half human and half beast, and was the inventor of pastoral music and he had a loud voice by which he often saved the wayfarer and indeed put whole armies to flight, and from his name comes our word panic.

Nearly all the earliest instruments of music were wind instruments, hence the word organ even in the days of Augustine was applied to all wind-instruments. Indeed the organ of to-day with all its pipes and reeds is in a sense a compound organ, each pipe or reed being an independent organ, and hence for this reason it is difficult to fix the exact date when the organ first made its appearance. The first organ proper was probably found among the Greeks of Alexandria, 200 B. C. This was a hydraulic organ or water-flute whose tones were sweet, but not powerful, and was designed solely for domestic amusement.

On a Roman monument is seen a description of an organ having sixteen pipes, and situated on a table, and having a key-board, and played by a lady with both hands. These organs, however, did not become numerous in Rome, as we have elsewhere said until about 300 A. D.

Organs are said to have been introduced into the churches in the seventh century by Pope Vitalian, but they were certainly used much earlier, as they were very common in the churches in the time of the Carlovingians.

The Byzantine emperors often sent organs to King Pepin, and Charlemagne as presents, and the first of these is described as a wonderful structure, having the form of a tree, in the branches of which were birds of various kinds, each giving forth its own peculiar note. Later we find organs which seem to us very rude indeed. The keys were often from four to six inches broad, and were struck with the fist and sometimes with the elbow, so that two tones could be produced at the same time. The

compass, however, was very great, having as many as twenty-one notes arranged according to the diatonic scale.

In those early times they built some gigantic organs; for instance, in 951, one was built for Winchester, and is said to have contained 400 pipes, and 26 bellows, requiring 70 strong men to work them and was played by two performers or rather four fists.

From the twelfth century we read of small organs, carried about strapped over the shoulder and these were played by one hand, and the other worked the bellows. The Italian painters of the fourteenth and the fifteenth centuries often represented this organ in the hands of angels instead of the harp or bugle, as we now see in paintings.

In the fourteenth century the size of the keys were reduced, so that they might be worked by the fingers instead of the fists, and soon we read of organs having three octaves including semi-tones.

The development of fugue music was in the Netherlands and its spread throughout Germany, Italy and England, gave great impulse to organ playing, and many volumes of these German compositions are still preserved.

In Germany the art of organ playing was diligently cultivated, and the family of the Kochs were the most distinguished, and Sebastian Bach afterwards carried this art to a high degree of perfection.

In Italy during the sixteenth century organs of very ornamental design existed, but the great organ-builders of this period were from Germany and Holland. The organs of Westminster Abbey, Temple Church and Durham Cathedral were built by a German named Schmidt.

From the beginning of the last century what wonderful improvements have been made!

One of the curiosities is the invention of a kind of string organ which is somewhat like an Eolian harp. Another is that of the steam organ, whose sound in some cases is said to be heard twelve miles. It is now used as a fog-signal, and also in the place of a chime of bells. It is said, however, that a monster organ, some think a steam

organ, was invented by a monk named Gerbert Sylvester, in 997, but steam was hardly so early applied.

Among the largest organs still in existence we mention the Weingarten organ, having 66 stops and 6,666 pipes; the Haarlem organ, having 60 stops; the organ of the Church of St. Stephen at Pisa, having 100 stops; the Crystal Palace organ, London, having 65 stops; the organ in the Church of St. Alessandro, in Cologne, 100 stops; the trancept organ, St. Paul's London, 60 stops.

Piano

The original name, piano forte, is of Italian origin, meaning both soft and loud, indicating the origin and compass of the instrument. The principle of the piano was as early as the fourth century, applied to an instrument called the clavichord and other instruments as the cithera, and harpsichord, and the spinet, and these were popular down to the eighteenth century.

England, France, Germany and Italy have each claimed to have invented the piano, but the best testimony ascribes it to Cristofali, of Padua, Italy, 1710. Marius claimed a similar invention in Paris, 1716, and Schroter in Germany, 1717. It was not until 1760 that it was manufactured in England and then by Germans.

Soon under the skill and energy of a firm named Broadwood and Stodart, as English manufacturers, the piano was greatly improved and soon became very popular.

The grand piano was first made 1781, the upright, 1795. But few pianos had been imported to the United States when in 1822, Jonas Chickering began their manufacture in Boston, and thus became the pioneer in one of the great American industries. It might seem invidious for me to even name the principal pianos now on the market of the world, since I might omit some which are regarded as superior.

Violin

The word is from the Italian, violino. The Anglo-Saxon name is fiddle. It is considered the most perfect musical instrument on account of its capabilities of fine tone and expression, and with the viola, violincello, and

bass-viol, forms the main element of all bands and orchestras except brass bands. Some have supposed that its history can be traced back to China long before the time of Christ. They were well known in England in the twelfth century. The most prized are those made in Italy in the seventeenth and eighteenth centuries.

Drums

The various kinds of drums are very ancient, and were used in heathen worship and in war. We now know three kinds of drums, the side drum, so named from being so strapped to the body as to be carried to one side, is sometimes called the tenor or snare drum. It is called a snare drum because of the strings of catgut stretched across the lower head, and it is called a tenor drum in opposition to a bass drum.

The bass drum is much larger and is beaten on both ends. The kettle drum is so named from its shape, being like the lower part of a kettle with a head set in it. It was formerly used almost exclusively in the army, but it is now mostly confined to the orchestra. In the eighteenth century a large fashionable assembly, says Smollett, was called a drum-major, from its emptiness.

Guitar

The guitar was known in the East from remote antiquity. The Moors brought it from the East, the Spaniards from the Moors, and the Italians from the Spaniards, and in 1788 the Duchess Amelia, of Weimar, introduced it into Germany as a new instrument from the Italians.

Many improvements have been attempted but nearly all have failed. As an instrument by itself, it has not been of much note, mainly used in solo singing, and was once popular in Germany and France with the minne singers or troubadours, the love singers of those times.

As an accompaniment to the voice it has been largely superseded by the piano. In private entertainments it is still popular with the most cultivated classes of society.

Clarionet

Tbe clarionet was a wind instrument, invented in Nuremburg 1690. In fulness and variety of tone it is the most perfect wind instrument. Its construction does not admit of every key being played on the same instrument.

Lute

The lute is an obsolete stringed instrument, now superseded by the harp and guitar. At first it had six strings, and at last twenty-four. The left hand pressed the stops and the right hand was free to strike the strings. It was once in high favor all over Europe. In the time of Handel, a lute was in the Italian opera in London, and a lutist in the King's chapel down to the middle of the last century.

Lyre

The lyre is the oldest stringed instrument of the Egyptians and Greeks, and is still used by some wandering musicians.

Flute

Flutes are very ancient musical instruments. Those of ancient Egypt, Chaldea, Greece and Rome were blown into at one end, and not at the side as now. Nero was a famous flute player and won 18,000 prizes. Ptolemy the XI was a famous flute player.

Piccolo

The piccolo is simply a flute of the highest register.

Bells and Chimes

From remote antiquity bells have been used in religious ceremonies, and from their noise on Sunday some have wished they had never been so introduced. Indeed in some places they have been declared a public nuisance, and the Courts have ordered that the ringing be discontinued. The great feast of Osiris, the god of Egypt, was commenced by the ringing of bells. Bronze bells have

been found in the ruins of Nineveh. In India and Athens bells were used in their ceremonies. Bells were first used in or on the church about 400 A. D. They were introduced into France in 550, and into England in 680, but not until the fourteenth century were bells of a large size used. In Paris in 1300 a bell was used weighing 14,000 pounds, and another in 1472 weighing 25,000 pounds. The famous bell in the Rouen Cathedral was put in place in 1501, and weighs 36,364 pounds. There is one at Toulouse weighing 66,000 pounds. The largest bell in the world is the bell of Moscow, cast in 1734. During a fire in 1737 it fell and was cracked, but in 1837 it was raised, and now forms the dome of a chapel in that city. It is 19 feet high and weighs 448,000 pounds. Another Moscow bell was cast in 1819 and weighs 16,000 pounds.

The great bell of Pekin is 14 feet high and weighs 107,000 pounds. The great bells have usually been cast amid religious ceremonies, and sponsors have been present, and the bells have been baptized, and the ringing of these consecrated bells have been supposed by some to dispel storms, pestilence and evil spirits.

The solemn tolling of the passing bell at the time of death was supposed to ward off the demons which might gather around the dying. The Curfew bell was tolled at eight o'clock, it being the time to put out the lights in the dwellings, and all to retire for the night.

The chimes of bells is supposed to have reached the greatest perfection in the Netherlands, and the chimes of Normandy, and the famous bells of Shandon are well represented in poetry and prose.

Great Composers

Handel

Handel was born at Halle, February 23, 1685, and died in London, April 14, 1759. At eight years he was quite proficient, and he spent five years at music in Halle. At thirteen years he was sent to Berlin to study in the operatic school, and remaining but a short time, he became violinist at the opera at Hamburg.

As a composer he found a rival in Mattheson, and in

a dispute Handel's bad temper led them to fight a duel. Mattheson's sword broke on a button on Handel's breast, when they were both reconciled and remained friends. At twenty-one he went to Florence, and now became eminent as an organist and composer. He visited Vienna, Rome and Naples, and at twenty-five he was made chapel master of the elector of Saxony.

On his visit to England in 1712, a pension of 1,000 pounds was given him, and then he made his permanent residence in London. At thirty-five he was appointed director of the Royal Academy of Music at the Haymarket Theater. His haughty and irritable temper made him many enemies, and gradually he lost his patrons, position, health and fortune, and passed twice through bankruptcy. He did not give himself to oratorio, his true work, until about fifty-five, when he began to rise. The first twenty-five years of his life he tried to become an Italian in music, but he was more of Saxon stuff.

His great work, the Messiah, was written for the people of Dublin, and they seemed to be the first to recognize the mastery of his genius, and by this and other oratorios he arose to the pinnacle of fame, and before his death he became the idol of the English people. He went blind when sixty-five, but died happy, and was buried in Westminster Abbey with the grandest ceremonies. He was a recluse and refused to be a member of any household, but lived in a room and declined nearly all invitations. He had only three associates; a copyist, a painter and a dyer, and it is said that he never loved a woman and was a true celibate. He at last paid all his debts, and left 5,000 pounds to the Foundling Hospital, London, and a large sum to his poor relatives in Germany. He was very fond of pictures. His speech was a mixture of English, German and Italian. At times he was haughty and irritable. He drank wine freely. His figure was large and imposing and his walk heavy and awkward. His violent temper at times knew no restraint. The orchestra commenced once without being tuned, and he rushed through the ranks, caught up the kettle drum and threw it at the leader, jumped upon the stage, lost his wig, stamped and choked with rage until finally calmed by the Prince of

Wales who was present. Mozart revered Handel and Beethoven bowed before his grandeur.

Handel ate enormously, and when he dined at a tavern always ordered dinner for three, and when told that the meal would be ready as soon as the company should arrive, he would exclaim, "Den pring up the dinner prestissimo, I am de company."

He was very miserly. When receiving 50 pounds a night from the opera, yet he would wear a shirt a month to save the expense of washing.

His favorite expression was, "Vat te tevil I care." When urged to accept the degree of Dr. of Music from Oxford by paying a small fee he said, "Vat te tevil I trow my money away for dat vish the blockhead vish."

John Sebastian Bach

He was born in Eisenach, Germany, March 21, 1685, and is spoken of as the father of modern music. The Bach family for more than 200 years had been distinguished, and more than fifty of them had become eminent in music. By descent he was a Hungarian. He was a north German and a Protestant. Early he abandoned the Italian school of music and became an independent explorer and discoverer in music. And unlike most others, music in every style interested him and he became a composer of all kinds of music, and a performer on all kinds of instruments; but he loved the organ most, and when a boy he walked miles to listen to a master organist. The greater part of his life he was court organist, a position that required great ability. In 1723 he was chosen musical director of St. Thomas' School, at Leipsic, when thirty-eight years of age, which position he held for twenty-seven years. He died July 8, 1750. He had ten sons and all were musicians. His fame has been increasing since his death, and Haydn acknowledged him as his only model and Handel said as an organist he had no equal.

Beethoven

Beethoven, a famous composer, was born at Bonn, December 17, 1770. His father was a good vocalist, and he

taught his son to play on the harpsichord before he was five years old. This was then his favorite instrument. He became a good composer at eleven, and at fourteen he was assistant organist, and at seventeen he was sent to Vienna to be under Mozart, whose school was then at its height. This became his permanent home and here he studied with Haydn and became a master of musical composition. The piano was his chosen instrument and he soon rivaled the best performers.

Compositions now came from his hands with marvelous rapidity, and before he was thirty years of age he published about thirty-five pieces. These were his happy and hopeful days, but they were soon clouded by misfortune, and in 1803 he became totally deaf, in part the result of serious and prolonged sickness, but the deafness came on slowly for some years. Now he became melancholy and unsociable, still his work went on, and for over twenty years he went on composing mostly symphonies, and in 1824 published his Choral Symphonies, by many thought to be the most significant, and so regarded by himself. His works during this time were various and remarkable for their thought and feeling, and the nine symphonies and the grand sonatas make him immortal.

He never married. His music is not scholastic but emotional, but not sentimental. He was a middle sized man with a massive head, broad brow, heroic countenance, wide nostrils, projecting teeth, heavy lips and high cheek bones. He once let his beard grow till it was two feet long, and he neglected his hair until it became so thick and stiff that he could hardly keep his hat on, and his biographer says his shaggy clothes made him look like a bear.

He always made his own coffee, and in a glass apparatus, and religiously counted sixty beans to each cup. Soup was his favorite dish, but it was hard to make it to please him, and he said of a servant who had told him a falsehood, that she was not pure at heart, and therefore could not make good soup. He punished his cook for the staleness of some eggs by throwing the whole batch at her, one by one.

He was one of the most absent-minded men. Once a

crowd was gathered under his window watching him, he having arisen from bed, and was standing in his night clothes meditating about chords and discords until the noise of the crowd below dispelled his reveries. At another time he was strolling upon the ramparts of Vienna with his hands clasped behind him, lost in thought, and only aroused by the laughter of some school boys. He had come from his home, and the weather cold and blustering, and he was there bareheaded and did not know it till the boys told him. He forgot that he owned a horse until the bill was presented for his keeping.

He would compose music while in his bath, and run the scale while pouring water over his body, and would pour floods of water on the floor, and not know it until reminded of it by those below. He had such a hatred of etiquette that he left his boarding place because the landlord would persist in bowing to him, but with all his peculiarities he will ever be esteemed as one of the great masters in musical composition. He died March 26, 1827.

Haydn

Haydn was born near Vienna, March 31, 1732, and died in Vienna May 26, 1809, at seventy-seven years of age. When five years old a teacher took him to Hamburg for education, and during the three years here he began to play on the violin and the drum, of which he was very fond. At eight years of age his fine voice attracted attention, and he was taken to Vienna as chorister for the Cathedral of St. Stephens. His first effort at composing, when he was thirteen years of age, was laughed at by Reuter. His voice having naturally changed, Reuter turned him into the streets penniless, but a poor barber gave him a bed in a garret. Here he commenced his work in earnest, although in poverty, and his playing on a violin and organ attracted the attention of the public. He was introduced to a great Italian musician, Perfora, of whom he learned much. He became chapel master of a prince and now fortune smiled on him.

When Haydn was about to sit down to compose he always dressed himself with the utmost care, had his hair nicely powdered, and dressed in his court suit. He wrote

only on the finest paper, and was as particular in forming his notes as if he had been engraving them on copper. Frederic the Great caused a diamond ring to be given him, and he said he could not compose well without that ring on his finger.

He still remembered the barber, and finally married his daughter when twenty years of age, but it was a bad match, and as she was exasperating, he left her, but still supported her. At the age of sixty he visited London where he was enthusiastically received. He was now worth $5,000, and five years afterward was worth $100,000. He returned and bought a home near Vienna where he died, highly honored by the citizens of Vienna.

Haydn was small, slight and dark, and was called "the Moor." His face was kindly, and he was deeply devout and religious. At the beginning and end of each manuscript was some recognition of the Deity. He was a Catholic, and it is said that he did more to develop instrumental music than any hundred of his predecessors. The number of his works is 800. His great oratorios are "The Seasons," and "The Creation."

Mozart

Mozart was born at Salzbury, January 27, 1756, and died at Vienna, December 1, 1791, in his thirty-sixth year. He was regarded a musical prodigy, and played the piano successfully at four years of age, and composed plain pieces, or rather dictated them to his father. At six years he played on the violin and greatly pleasing the people.

His father made tours and exhibited his two children in the most important cities, and at eight Mozart began composing symphonies used at concerts, and Handel and Bach became his models. The father and son traveled in Italy, and were everywhere attended with grand success. From 1777 to 1779 he resided in Paris. In 1787 he went with the Archbishop of Salzbury as a member of his household to live at Vienna, which became his home. Here he married Constantine Weber, a pianist, and an accomplished lady. Now he became famous as an operatic composer, but consumption and a nervous disease soon began their deadly work. A mysterious messen-

ger came to him one day and begged him to write a requiem, not explaining his object, and Mozart thought from the first it was his own requiem. He sank rapidly and died while listening to its rehearsal, and on a dismal, rainy day, not a friend following him, he was hurried through the streets of Vienna to the common burying ground and buried in his clothes, and now his grave is unknown.

Vienna never honored him properly. His compositions are of great variety, and he was the best pianist of his time in Germany. His life was less than half the usual length, but he wrote 626 public works, and 294 compositions are unfinished and unpublished.

Mendelssohn

Mendelssohn was born at Hamburg, February 5, 1809. At eight years of age he could read music at sight, and compose correctly. He was the leader of a small orchestra at home in the evenings. He was educated at Berlin, and at seventeen years of age he traveled through Scotland, England, Germany, France and Italy. At last he removed to Leipsic, established a conservatory and made it the leading city for music in Germany. He was intensely sensitive and even frolicsome in his mirthfulness.

As a pianist he was one of the most eminent of his age. His oratorio, Elijah, and his Midsummer Night's Dream are popular, but his greatest work is St. Paul. He was a Jew, and with his own nation his works are especially popular. He died of apoplexy, November 4, 1847.

Gleeck

He was the predecessor of Wagner and Meyerbeer, and was born in the Upper Palatinate, July 2, 1714. He is described as having eyes wide open, big nostrils, massive chin, noble brow, and a large and robust frame. He was educated at Prague, Vienna, Milan, and then in London. On one occasion when Handel heard him he exclaimed, "Mein Gott, he is an idiot. He knows no more of counterpoint than mein cook." He failed in London and returned to Vienna and became very successful on the Continent. He was in Paris in the high days of Rosseau and Voltaire, and composed music to suit them and

was declared the Hercules of music. He returned to Vienna, where he died in 1787 by excessive use of wine.

Lowell Mason

He was born in Medfield, Mass., January 8, 1792. He, however, began his music career in Savannah, Georgia, in 1812, and in 1821 he published his collection of church music from Handel and Haydn. He removed to Boston in 1827 and began as teacher of vocal music. He has the honor of introducing music into the schools, and he established the Academy of Music in Boston. He was no critic, but became a popular teacher of popular music and a composer of church tunes.

In 1837 he visited Europe and studied in Germany and England. In 1855 the University of New York conferred on him the degree of Doctor of Music, the first of the kind in the United States.

Meyerbeer

Meyerbeer was born in Berlin, September 5, 1794, and died in Paris May 2, 1864. Quite early in life he was very proficient as a pianist. He turned to composing dramas under Weber and Volger, and he studied chiefly at Darmstat. His Jepthah utterly failed when rendered at Munich, as did also his other plays. He then went to Italy and became very popular there. He then went to Paris and brought out a play with the curious title, "Robert the Devil," which became very popular all over Europe. His French music is the most popular.

SOME GREAT SINGERS

Francesca Cuzzom

This lady and Faustina Bordoni, Handel imported to London from Italy, but the first was the most popular. It is a wonder that it was so when we remember that she was ugly and ill-shaped, full of conceit and insolent, and had an obstinate temper. It was she who on one occasion refused to sing her part, and when Handel threatened to throw her out of the window. It is said that more than

one duel was fought between young men to determine who should escort her from the theater to the carriage. It seems that Handel was jealous of her and she retired to Vienna.

Sophie Armoreld

She was born in Paris, February 14, 1744. For several years before the French Revolution she was regarded as the queen of French society.

When Benjamin Franklin was in Paris he found no pleasure, wit or brilliancy like he found in her salon. She received great flattery and became somewhat intoxicated by it. To a man who said to her that if he did not win her hand in thirty days he would blow his brains out, she replied that she thought that he had done that long ago. She once asked a man what he was thinking, and he said he was thinking to himself, when she replied, "Be careful, for you gossip with a flatterer." She seeing a physician with a gun, laughed and said, "You are afraid of your professional resources failing."

Henrietta Sontag

She was born at Coblentz on the Rhine 1805. She is regarded as the greatest German singer of the century, and the Italians call her the nightingale of the north. Some German students at a banquet drank champagne to her health out of her satin slipper which they stole from her wardrobe. She was already famous at eight years of age. She was carefully trained by Weber at the conservatory at Prague, and when fifteen she sang at Paris in place of a prima donna, and one said of her, "Had I her voice I would hold the whole world at my feet."

An English Earl was greatly fascinated by her. Her last name, Sontag, means Sunday, and they named the earl Monday, because Monday follows Sunday, as he followed her almost everywhere.

She was of medium height, well formed, hair light brown, large blue eyes, firmly moulded mouth and perfect teeth.

Farinelli

He was the greatest tenor singer of his age, and he was born in Naples in 1705. He was popular all over the continent. The enemies of Handel brought him to London in 1834, and he received many princely gifts. He spent twenty-five years at Madrid in the court of Philip V of Spain, and it was he who cured the king of melancholy by his music. He then went to Bologne and collected a vast gallery of paintings, from Italian and Spanish masters. He was very tall and as thin as a shadow.

CHAPTER XIV

TEACHERS AND TEACHING

First of all I wish to give in brief the origin, scope and design of the public school work in the United States. You will remember that it commenced first in private instruction. Church pay schools were the first schools, but it was soon discovered that there was a large number of children whose parents could not pay their tuition and provision was made in the local community whereby their tuition might be paid for them and they have free schooling. The question expanded and they said why not levy a tax on the borough or township that all the children may be educated free? This became popular, and it spread throughout the States, but Pennsylvania and a few others were a little slow in adopting the public school system, but under the leadership of that great man Thaddeus Stevens, of the Keystone State, it was at last adopted. A great many people objected to it on the ground that it was not right that they should be taxed to pay for the education of other people's children. But I suppose there is no tax now more cheerfully paid than the school tax.

When the new States were admitted into the Union, they were admitted by giving a promise that they would establish the public school system throughout the State, and no State has been admitted into the Union without such a provision. Thousands of acres of land have been set apart by the Government for public school purposes, and for the establishment of universities, colleges, agricultural and normal schools, and it has donated millions of money for the establishment and support of these in-

stitutions. I mention these things for the purpose of showing that it is an error to suppose that this Government has only designed to give free education to the people in the lower grades of school. It may be seen by what I have said that it was the design that we should have a perfect national system from the lowest primary up through the State college to the highest university, which the money of the nation could establish and perpetuate.

It was never the purpose of this nation to be dependent on church schools for the proper education of its citizens. It is known that already there is a decline in many of these church institutions, and female colleges especially may soon be among the things of the past, but those which are the most heavily endowed will last the longest. You may ask why? The reasons are obvious. When female colleges were established, ladies were not admitted on equal terms with young men in the higher institutions of learning, but now nearly all institutions of any popular grade at least, admit them. More than that, our high schools have so far advanced in their course of study that they can furnish instruction equal to and in many cases superior to the instruction given in the average female college and furnish this to the resident pupil free. You see, therefore, why it is that the female colleges must decline; but there are some, however, which will be continued by some of these denominations. Literary and classical denominational institutions will continue for some years to come, but in most places I would not advocate the establishment of any more of them. There is room perhaps, for a few of them yet to do work that is not done in the national system of education. I cannot see why men of different denominations should pay their money for the establishment of a church literary institution. It is perfectly proper to pay their money for the establishment of schools where theology is to be taught. You will recollect they will say to you, "No matter what your son is, if he is a Presbyterian or a Baptist, you can send him to the Methodist school. It don't matter what his religion may be," so I say if any young man can go to these institutions on an equal basis with

our Methodist boy, can you explain to me why, then, it is the duty of the church to sustain a literary institution simply to teach the classics and sciences? Oh! but you say it is necessary to have religious instruction in these colleges to save the young people of this country. This is a reflection of what is sometimes openly said of the State colleges and universities as being destitute of this religious and moral instruction, which is not the truth. You will recollect when I mention it that perhaps every president of every State college and university in the United States, with rare exceptions, is a minister of the Gospel, at least a Christian, and a majority of the instructors in those institutions are church members, and if I were a president of one of them I would not take this criticism very good humoredly.

My point is that we need to perfect our national system of education and then stand by it. But it is sometimes said that the money appropriated to support these colleges and universities is not wisely spent. State appropriations in other directions are not always wisely spent, so I read in the papers, but I believe as a rule with scarcely an exception, those institutions have wisely expended the funds that have been given them. You know that there is opposition to our system of education sometimes more pronounced than at others. There is a common ground upon which the Christian people of this country can stand, and I say such ground is our national system perfected, so that a student can start from the lowest grade and go up easily from one grade to another, graduating and going to the State college and from the State college to the highest university in the United States. That is what I long to see completed, a connected national system of education. Other nations are so proud of our system that they are not only studying it but copying it in consistency with their own peculiar government customs.

Now, then, we have working in these lower grades of schools about 300,000 teachers, not counting those in the colleges and normal schools, but in the high schools and grades below them. What a grand army! And more than 26,000 of these are in the State of Pennsylvania.

When I think of such an army of young men and young women handling thought, handling minds, handling hearts, handling lives day after day, what a grand work it is! You must excuse me if I feel and write enthusiastically of this work. There is not only this vast number engaged in the work, but these persons are supposed to be well qualified for that work. It is not, perhaps, proper for me to speak very much about the literary qualification of these persons. I can only say in passing that I think the required qualifications are good, and if there is any advance, I do desire it in this, that there shall be required of all these teachers a more general information, not perhaps more knowledge in specific book work, for I see that the broadest education is not that which is simply taken out of books. We must have teachers of such general information as that can mould the child's mind and let him see the vast world he is living in.

The moral requirements of a teacher I think it proper to write about. You know they must have a certificate from a minister or some person duly authorized to accredit their moral character to the superintendent who is to grant them their certificate. What is implied in a good moral character is left largely to the discretion of that person granting the certificate. I don't know how uniform is their management on this question, but I think no young man or young lady ought to take charge of any of our schools who denies the Bible as the Word of God. I think no young man or lady ought to be allowed to teach in our schools who denies the existence of God, for I hold that there is still moral teaching required of these persons, and that the Bible itself should be the basis of all moral teaching here. How can a person be consistent and teach morals in which he has no faith? How can a man impress the thought of a God, and that a child shall be responsible to that God, when that person denies the existence of such a being? I think in some way our superintendents ought to be satisfied that such an individual does believe this, and I would withhold the certificate where the evidence was not clear. An unquestionably pure moral character should be required. The moral teaching to be done in the school is a very deli-

cate subject. I think there is a safe ground upon which we can all meet and all stand together. There will be occasions rising constantly, I might say, in the school room where it is necessary that morals should be taught. You may say, why not remand the subject of moral instruction to the Sunday-school, to the church and to the home? Unfortunately the number of Sunday-school scholars in this country is a small fraction of the number of pupils who attend the day schools. Comparatively few of these children are found in church services. How are they to get the instruction at home when in many, oh, so many cases, parents are incompetent to give them moral instruction? Moral instruction must go along with intellectual training in order to make a safe citizenship. We cannot therefore remand the subject absolutely, even if we were to try, it would be impossible. Questions of honesty constantly come up in the school room; questions of truth; questions of love; questions of right and wrong, and the teacher cannot evade giving out an impression on them. They make an impression one way or another. I am reminded of an instance in the first school I ever taught. I had a boy in that school who was deaf and dumb, a good boy, a religious boy, a conscientious worker, and as is often the case the other boys of the school were disposed sometimes to taunt him. One day during the noon hour I suppose this boy had been watching the conduct of the other boys, for he picked up a piece of crayon and went to the black-board and wrote on it, "Do you want to go to Heaven"? One of the other boys in order to tease him a little, wrote quickly under it, "No." He had scarcely laid down the crayon when he picked it up and wrote under the word no, "You want to go to hell"? He wrote under it, "Yes." Oh! the agony of that boy, he could not write any more. By his actions he showed how he might be cast into hell and God turn the key upon him and I said, "Boys, there is a lesson you should never, never forget." And the teacher must say or do something that will impress either the right or the wrong, and therefore must teach, as an absolute necessity, one way or the other, right or wrong. It is important, therefore that we have religious or moral in-

struction, not denominational, but on the broad general principles accepted by all Christian people.

If I had my way I would make selections from the word of God of those chapters or portions of chapters which are suitable to be read in the school room, and there are books of this kind, especially in the higher rooms. In the lower rooms, about the best that can be done in that respect would be reciting the Lord's Prayer, but the word of God should be in every school room; it should be read without note or comment. This moral instruction is important to make good citizens.

The work thus committed to 300,000 teachers is a very important work in its vastness, in the great opportunities they have to do this work and how great therefore is the responsibility of teaching!

The teachers have these pupils five days in the week, but the minister a few of them one day in the week, but if they do their work well, his work will be easy. If they lay deep and broad the foundation principles of truth, and love, and right as found in the word of God, it will be so easy for the minister to carry on the work when they come under his instruction. But if they sow malice, if they sow anarchy, if they sow anything that leads to the destruction of society, if they cast a reflection on religion, they make his work difficult. You see, therefore, how I appreciate their work and the importance I attach to it that they may do that work well, so that the minister will have no correcting of their work when it comes to him.

There are very great trials connected with a teacher's life and which are not always appreciated. I may say very seldom fully appreciated. Some people say, "The teacher makes his money easy." If you think so, just let me take you to-morrow morning and put you into a room of fifty children, and tell the teacher, "You go up there into the bank and let him stay here." I go around at three or four o'clock, I find you almost tearing the hair out of your head, and saying, "Let that teacher come back to-morrow." You would see what it is to keep in order forty or fifty restless children. Never say he makes his money easy. It is the most trying work upon the nerves which I can think of at this moment. It is the

more wearing on the constitution of a young lady than anything I can call to mind. I sympathize with them in all their discouragements. Let me assure them I rejoice with them in all their successes. Directors or school boards, do not consider that money spent in your local schools for the convenience of those school rooms, to facilitate the work of those teachers, as loss of money. I have seen teachers working along almost without tools of any kind because the board said, "We cannot afford to give you any money to get them. We did not have any when we went to school." No, but we must have them now if the school goes onward, and is successful in holding the children and training them as they ought to be held and trained, to take the places they must take in the world at this age.

My observation is this, that school boards are often not what they ought to be. The boards are worked by local politicians, and on the board often is the first stepping stone to political position and influence. I have known men on these boards who could neither read nor write, and men who were saloon keepers, and if there is any part of our school system that needs immediate renovation, it is the character of our school boards. I do not know how it is to come about, but I pray God will hasten the day when we shall have the best men on our school boards, men who know what education is or ought to be. I do hope that some time or other our whole school system can be taken out of the hands of party politics, and let us hold it far above all such partizan feeling. The standard of the work of education should be almost up with the platform of the pulpit and where we can welcome the three hundred thousand teachers of our land and grasp them by the hand and bid them God speed in their work, and what I want is that they shall have hearty support in their work and not be held back in such a glorious work as this.

Teachers should live such a consecrated life in their work that their work will lead towards truth and to God, that every little boy and girl in the room will be lead to see a worthy character exhibited in their life, and so live as there shall never be anything in it that shall lead the

unwary astray. They copy you more than you think, and how pleased you will be in later years of your life should they come and say to you, "You taught me my first lessons in honesty, in virtue and truth. I have never forgotten them." On the other hand, if they are careless and negligent and they should lead their feet away from the truth, away from God, what will be the account they must render in that Day? Oh! for consecrated teachers, that shall feel the high nobility of the calling, who will ask God's guidance and help in the work.

You are building, building, building, we are all builders, and for months and years we must be building for we are assured that you do not for a moment think that you have at any time completed the edifice of character or the temple of knowledge. No, you feel that you have only gotten upon the ground floor, but we do sincerely trust that you have gotten something solid under your feet, upon which you may safely erect the superstructure of fortune and fame, and as you view the work thus far done, the paintings on the walls, the carving on the pillars and the frescoes on the ceilings, you will not forget that it is the work of amateur artisans, and we hope to give you such encouragement and enthusiasm and cheer as that you may go on to the final, and we trust glorious consummation of the work, character building.

You may finish one pattern in the web of life. Others may not like it, some will criticise it, they will find some threads out of place and some colors not well blended, but they should remember that it is about the first pattern you have ever put before the general public; and we believe that you intend to improve upon every pattern you shall in after years present to the public, and we have the fond hope—a hope that we trust may be realized—that when the entire web of life is completed, that all its designs, colors and threads may so harmoniously blend that we may hear some kind, approving angel say, "Well done."

But while we have such strong faith and sweet hope in the final ending of all your efforts, still we do not forget that you have little more than begun your life's work, but we do hope that you have begun it well.

We trust that you may take many new departures. You may launch your boats but where's the shore; you may strike your tents but where's the camping ground, and at the voice of your commander you may break ranks, but where shall be the future place of rendezvous?

To this hour in all your exploration I may say you have done but little more than coast along the shores of knowledge, but now hoist anchor and may the star of a noble destiny never for a moment be lost sight of, while passing under the clouds of adversity, and may kind Heaven lend its favoring breezes until you tread the happy shores of an immortal life.

My friends, life is to you and to all a great occasion. It is not so much a grand consummation as it is a glorious beginning.

This may be your sunrise, and may be the beginning of the great day of your public life, and as at the sunrise, hills and vales, woods and landscapes, clouds and skies, are beautifully netted together in a golden mist, so the future to you is not clearly outlined, but as you prismatically look through all intervening objects upon the spectrum, may you behold the rose tint, the flush of your fondest hopes.

We trust you occupy some eminence where your horizon is broader than formerly, but you will observe that "to loftier heights" shall be your motto, and so as you continue may your thoughts and may your hearts continue to broaden as the process of the sun.

"In a valley, centuries ago,
Grew a little fern leaf green and slender,
Veining delicate and fibres tender,
Earth one time, out on a frolic mood
Moved the plain and shook the haughty wood,
Crushed the little fern in soft moist clay,
Covered it and hid it safe away.
At length there came a thoughtful man,
Searching nature's secrets, far and deep,
From a fissure in a rocky steep
He withdrew a stone, o'er which there ran
Fairy pencilings, a quaint design,
Leafage, veining, fibres clear and fine,
And the fern's life lay in every line."

So this is nature's fine and imperishable penmanship on the entablatures of the earth, and far surpasses those unknown and human writings on the Moabite stone, or those pictured chiselings on the great monoliths of Egypt. Time wears these away, and soon the smooth surface like a blank page will tell no story to succeeding generations, but nature's records on the rocks will remain till the end of time.

As we read the story of great battles and see pictures of falling and dying men, we almost think we can hear their dying moan, and so as we read the sad story of the rocks, as those great floods and glaciers bore down the huge mammoth, behemoth, and mastodon and imprisoned them in the sedimentary rocks, we almost think we can hear their terrific dying groans.

Thus reading these records of nature, while full of thrilling interest, still they are full of sadness and we seem like reading the inscriptions in some old briar-grown grave-yard.

And so we are every day writing, but not with pen, writing not perhaps with those great master strokes of nature, which we have been reading in the stratified rocks, but writing on the sensitive tablet of human hearts. And how endlessly variegated is the writing, made so by the character of the words we utter. An angry word puts in a line of red, a bad word a line of black, a friendship word a line of blue, a jealous word a line of green, a peace word a line of light.

Thus we are writing all over each other's hearts more closely, too, than any writing ever found upon an Oriental parchment. And in our writing what colors predominate? Red, written in blood; black, casting a shadow on the life; green, filling the soul with envy and jealousy; blue, linking hearts to hearts; light, casting the shimmering sunshine o'er all the life. And this writing is ineffaceable; rub it out even with the softest hand of pity—never; eat it out with the keenest teeth of chemicals—never; wash it out with the storm tide of time—never.

Doubtless the recording angel, while putting down many things against us as he writes, drops many a tear that blots out many a bad word from the book of life, but

all his tears, though they were an ocean, cannot blot out the smallest word from the tablet of a human heart.

What is written is written, and even the rough gouging of the jack plane of adversity cannot tear it away, neither can the over-stamping of good deeds and good words obliterate it—there it is and it is as imperishable as is the fibre of an immortal soul.

And this writing on our hearts can be read only by our own eyes, and others cannot read even the lines which they themselves have written. It is to us forever a private record.

Some of these lines we would be glad to let others see and read and hope that the reading would at least excite a tenderness of mutual sympathy, which we feel we so much need to up-bear us in the burdens of life; but there are other lines over which we consider it a holy duty to throw the veil of eternal secrecy.

No thumb-screw can pinch tight enough, no rack is strong enough, and no fire is hot enough to make us yield up these sacred treasures of the heart; and as nature does not yield up all its precious stores to any man or to any age, so man does not and should not surrender all the precious things of the heart to any one, whoever he may be.

And so we are all writers, constant writers, imperishable writers, and when the record is at last finished and Death tells us that it is now time to write Finis, it will be an eternal benediction to the soul to know that in all the volume there is

> "Not one immoral, one corrupted thought,
> One line which dying, he could wish to blot."

But what of the Future?

Is life a disappointment to most people? Many think so. To some it is a sad disappointment, but to others it is a happy disappointment. It is certainly quite true that most people find life vastly different from what they expected, and to continue an old figure for the want of a better one, the voyage is attended with vastly different circumstances than they had supposed, although one

would think from the great amount of what has been said and written upon it, that we would know even before we came to them every cape and promontory, every channel and strait, every hidden rock and reef—yes, and even every kind of vessel we should sight in our voyage.

And how few people reach the port for which they set sail in life. But what if I set sail for Paris and finally drift into the harbor of London. Business London may prove to be to me far better than fashionable Paris.

That ambitious navigator that once sailed out of the humble harbor of Palos, seeking for a new water-way to India, did not find it, but accidentally found a new world, richer and grander than a thousand Indias.

The name and fame of Columbus would have doubtless long since perished, had it not been for the unexpected find of America.

So it is often that the unexpected turns in life are the only things that save us from defeat and secure success and fame.

See yonder that panic-stricken, routed, fleeing army, dashing pell mell down the valley. But yonder on the brow of the distant hill I see coming a foaming, dashing steed, its gallant rider raising his hat in the air and his keen saber glittering in the sunlight, and thus the timely but unexpected arrival of Sheridan not only saved the day and the army but saved himself to everlasting fame and glory.

But the unexpected is not always of this welcome and favorable kind. It does not always bring joy and peace. Sometimes a shadow comes through the window when we are looking for a sunbeam to enter. In our vain search for the rose, we are pricked by the thorn. In listening for the sweet symphonies of pity and love we hear nothing but the harsh discords of hate and cruelty. But let us not despair. That must be a very poor house indeed, that has not more than one window. If there is a shade on one side of the house, there is sure to be light on the other, and if the storm beats on one side, there is sure to be shelter on the other. Let us learn the art of finding

the lightened windows and sheltered side in the affairs of life, and not always stand complaining in the deep shadows and the drifting storm.

We will often doubtless find that "the time is out of joint," but never let us show ourselves the weak vacillating, hesitating coward by saying, "O, cursed spite! that ever I was born to set it right."

We are born to set the times right, as far as we are able and to cause the unexpected real good to happen and to banish the unexpected evil beyond the realm of possible realization, and in our efforts in doing this, let us be encouraged to know that it were far better to make a success in a humble calling than to make a failure in a grand one

CHAPTER XV

THE NEW EDUCATION

It is important for us to inquire what are the proper demands for education in this day. The farmer must inquire each year, if he is wise and judicious, how many acres he should plant and how many acres he should mow, and he must take into account how much grain he needs for his own family use as well as for his stock, and then he must calculate on how much he will have for the market. A question is often asked, "Are there not today too many people being educated beyond the common school education," or, in other words, "Is there a demand for so many persons being highly educated?" I cannot take the space now to show what I have carefully investigated and that is, that the proportion of persons receiving an education beyond the common schools is not keeping pace with the increase of population. Pittsburg, for instance, is increasing in population over 20,000 annually, but the numbers in attendance in the various schools, public or otherwise, with two or three exceptions, are not increasing in the same ratio; and the number of graduates from these institutions, which, after all, is the only true test of this principle, is falling behind the increase of the population of the city. There is, of course, a large number of graduates from these different schools who are not employed, and this will always be the case in every department of business. For instance, if you advertise in some evening paper for a servant to do house-work and next morning before you are up, what a crowd will be at your door. Have we then too much help? No;

this is no proof that the people are too well supplied with help. Advertise for a clerk or bookkeeper and a similar result as to numbers will follow.

Positions are multiplying as business increases and men are pushing up and filling higher places, leaving their own vacant, which, of course, must be filled by some persons. There is a great and pressing demand for well qualified persons who can fill the various positions both in these and in professional life.

Persons who can show that they have been carefully drilled in the principles and practices as far as may be before they come to assume the duties and responsibilities of business, are the persons who are much sought after. In this day of hurry and dash, business men have not the time to train young men under them as clerks and bookkeepers; nor have teachers time to train subordinates to fill the positions in lower grades. Young preachers are no longer trained as in former times, under older ones, but must be qualified at first to take charge of the church or congregation, and this preparation, of course, must now be greater both in the extent and the depth of the knowledge required.

The old idea of self-made men being the best and most useful and the most practical, is no longer accepted or believed by any considerable number; in fact it never was true to any considerable extent that men were self-made. True they may not have attended schools in which to secure their training and their knowledge, but they have had the use of books—books which have been largely furnished—I may say universally furnished by persons who have been educated in these institutions of learning. This boast of self-made men reminds me of an instance. A bald-headed man was once boasting of being self-made, and he made these boasts frequently in the presence of his friend, who at last became tired of his repetitions. Now to this self-made man one day he says, "You say you are a self-made man." "Yes, sir," was the reply, "Then why did you not finish the job and put some hair on the top of your head?" Self-made men are not quite finished.

But this new education is of great and prominent importance to all classes both of town and country. As

farmers, their children need higher education than in former times, as the farmer is dependent on the town and city for his trade as much, perhaps, as the city is dependent on the farmer for his produce. This exchange of commerce which is going on between the farmer and the towns-man is in this day conducted on higher business principles than in former times. The sharp competition, and now and then sharp practices, which are engaged in, compel the farmer to have his son well educated in business forms and practices. He must understand notes, checks and mortgages, so that he may not be swindled out of the price of his produce, and that he may be able to defend himself, indeed from all classes of sharpers. Farmers' sons and daughters must be educated in this day to a higher plain than ever before. The greatest proportion of our business men have come from the farm, and this will probably continue to be the case in years to come, since it is said that very many of the sons of our business men do not succeed them in business.

It is also a fact that the greatest number of ministers of this day come from the farms, and it is also true that most of the theological students in our various seminaries to-day have come from the country, and the supply to fill these various business and professional places must still continue, no doubt, to come from the country.

In a purely business manner let me say if your son or daughter wishes to go to the town or city to secure a higher education for the purpose of entering into business or professional life, do not hinder them, nay, rather help them, for the history of the past shows us that we are dependent on them for the continuance of the business and the professions. Do not think that they will be necessarily ruined by the city life; doubtless many have thus been ruined, but many more have stemmed the tide of temptation and have grown up, and as I have said are now the substantial business and professional men of our cities. But beyond this the demand is great for the higher education of your sons and daughters.

Let me say that we are having to-day a better class of schools and more practical and useful education than ever before.

Educators during the past few years have been studying and planning and I may say they have been succeeding in adopting methods by which your sons and daughters may take up these different callings and professions with more practical ideas, that they may enter them with greater hope of success.

Business colleges, at least many of them, have gotten down to actual business practice so far as it is possible without handling the goods themselves, and teachers are taught the best practical methods of work in the school room, and how the methods may be applied in the various grades of schools, so that in a shorter time the children of to-day may gain a higher education than in any former time.

We are giving more flexibility to our courses of study, so that each person may get the special study he wants to fit him for his work; hence many of our studies, especially in the higher languages and mathematics are being made elective and optional, and more practical studies are allowed to take their places. We certainly cannot continue to carry all the past with us, however worthy it may be. We must drop some of the studies of the ancients, or give them less time. New sciences and branches of science are demanding attention and no one man is able to grasp and carry with him all the learning of the past. We must live for the present and the future. At our school commencements the precious dust of Demosthenes, Cicero, Plato, Homer and Virgil, is not stirred up quite so often as in former years. That young man on the platform, as you have observed, is most loudly applauded who takes a timely subject and treats it in a practical way.

I am intensely in earnest in my endeavors at least to secure a modification of our course of study, especially in our colleges and universities, so that they shall drop much of the old past and take up more and still more of the living present. One life is too short to compass all the knowledge of the universe. This effort to carry with us all the ancient learning is somewhat like the boy, who when he becomes a young man would put on his father's

coat, and then after a while put on his grandfather's coat, and then if it is still preserved, put on his great grandfather's coat.

Surely we must lay off the musty,moth-eaten garments of the past, and put on the beautiful robes of the bright present. It will be far better indeed for any of those who may be considering that it is too late for them to prepare for these high and responsible positions, to go into life's harvest field a little late with a keen sickle than to go in early with a dull one.

Woman's certificate from God for work is her ability and adaptability to do that work, and her ability is the gauge of her responsibility, and no person is responsible if circumstances absolutely forbid the exercise of this ability. Society now considers itself very far removed from paganism, but it is wonderful to observe how much the manners and customs and civilization of this day are still influenced by pagan notions and ideas. Secular civilization may be traced back from the United States to England, from England to Rome, from Rome to Greece, from Greece to Egypt,and from Egypt to Persia, and from Persia to India. And among Hindu proverbs may be found the following relating to woman: "Ignorance is a woman's jewel. Female wisdom is from the Evil One. The feminine qualities are four—ignorance, fear, shame and impurity." Now, as a result of such contempt of woman and her capacity for learning, we have the unexampled degradation and oppression of women in India and other countries, and which forms such an insuperable barrier to modern missionary enterprises. But see how modern nations have copied the pagan sentiments of these countries. It is an old Italian proverb that "women are wise off-hand, and fools on reflection." It is a German saying that, "There are only two good women in the world—one of them is dead and the other is not to be found." And the European idea of woman is but a step, and that a short one, too, in advance of the Oriental sentiment. I know we may be pointed to their queens, princesses and ladies as a seeming refutation of this position, but it should be remembered that she is not elevated to

these positions of respectability and honor because of her natural or acquired endowments, but mainly, if not solely by virtue of her blood royalty.

But what have been and now are the American ideas upon this subject? A few years ago, and only a few, we were measuring heads and weighing brains. The phrenologists, after careful measurement, came to the deliberate conclusion that the facial angle of a woman's head was less than a man's, and they settled down with satisfaction that this was conclusive evidence that her capacity for intelligence was less than man's. O, how comfortable they felt! Man is still to be her liege lord. But he began to think again of her skull, whether her forehead was prominent, broad and perpendicular, or narrow and receding, just so she had the same amount of brain. I suppose they were led to this train of reflection by observing some men whose heads did not fill out their model of intelligence and yet were wise, hence they said, as the brain is the organ of the intellect, the larger the brain the larger the capacity for thought, hence also they said, to settle this matter we will weigh their brains. They did so; and O! how happy they were with the result! Man has several ounces more brain than woman. O, did not these lords feel good over that? But this same investigation forced upon them another conclusion over which they did not rejoice so much, that was that although woman's brain lacked in quantity, it excelled in quality. Man's brain was coarser, but woman's was finer, and that the capacity for thought depended not upon the quantity but the quality of the brain. Hence originated that home-spun adage, "Little head, little wit, big head, not a bit."

Now while we believe and admit the general principles of phrenology, we attach but little importance to its particulars. The bumps upon a man's or woman's head are not of half as much importance and interest to them as the corns upon their toes. The mountains and hills of the globe are the least productive and the more prominent the more barren they are. The valleys are for richness, and who can absolutely tell but what the prominences of the brain are the barren places and the depressions are the valleys of its fertility?

And now aside from this, this fact will become obvious upon a moment's reflection, that the farther we are removed from the influences of monarchy, and despotism, and paganism, which are regular descendants in the order named, the nearer is woman recognized as man's equal, and whether this fact is welcomed or unwelcomed by us it is nevertheless the fact.

Do I not state a truth when I say that the United States is the farthest removed from the influence and control of paganism of any nation upon the face of the earth? Is not this also the truth that here woman is less oppressed and more free; and do not the laws and customs of society grant her more rights and privileges than in any nation in the world? Hence it is true that the more entirely society frees itself from the hateful incubus of paganism, the more clearly and powerfully does woman's intellect assert itself. Look at these interesting facts: Not a poetess, nor authoress, nor paintress, nor sculptress (if you will allow the words) of any note can be found mentioned in Greek or Roman history, but we do read of men, such as Homer and Anacreon, among the Greeks, and Virgil and Tacitus among the Latins. And we will venture that no one can write down one-half dozen names of German poetesses which you have ever seen or heard or read about, and the same is true regarding authors, sculptors and painters. Go from the Continent to the British Isles and there you discover a marked step of progress. There you will find more women engaged in writing, in sculpture and in painting, and among her poetesses and authoresses are names worthy of honorable mention, such as Mrs. Browning, Mrs. Hemans, Mary Howitt, Hannah More and Mrs. Southey, but the United States can outnumber Great Britain two to one, and the lustre of their names is not dimmed by comparison with the illustrious names of Europe. Such names as Alice Carey, Phoebe Cary, Mrs. Julia Ward Howe, Miss Nancy A. W. Priest, Mrs. Lydia H. Sigourney, Mrs. Harriet Beecher Stowe and Mrs. Amelia B. Welby are worthy to emboss any nation's escutcheon. Women here write more books and more articles for the press than in all the world besides. As for painting and sculpture, they are

equal to, if they do not excel those of any nation. With what true pride do we love to speak the name of Harriet Hosmer, the sculpturess. Whom did Congress select to cast or carve a bust of the man whom this nation will never forget to venerate—Abraham Lincoln? An American lady, Miss Vinnie Ream, and for which bust which cost her about three years of mental and physical toil she received the handsome sum of $10,000. It is now finished and is in Washington, where it will ever remain both an honor to our country and to the lady that fashioned it. Thus it is seen that in America the intelligence of woman surpasses the intelligence of woman in any nation, ancient or modern, and for this reason that here woman is freer from the despotism and paganism of other nations, here she is recognized as nearer man's equal in rights and privileges, and hence nearer his equal in intelligence.

Twenty-five years ago, how many colleges in the world were open to female students on the same principles as male students? Few or none at all. And why? First, it will not do, said they, to educate them together, for it would endanger the morals of both. Well, they were designed to live together, and if so, why not get a little acquainted first? But, to be serious, does such a system of education demoralize both? I answer, it does not, and as proof, we say that the morality of those institutions in which she is admitted equally with man, is equal, if not superior to the morality of those colleges from which she is excluded. It has been clearly shown—and more, it is very natural and reasonable—that the education of the sexes together has an elevating, refining and restraining effect upon both of them. Another reason why she could not be admitted to the same college with man, was the supposition that her duties in life, as well as her capacity of intellect, required a different and inferior curriculum of study. How slow were these educated men to discover this double error, but, thanks to Providence that they discovered it at last.

Mount Union College and Oberlin College, Ohio, were among the first in the United States, if not in the world, to admit woman upon the same educational platform as

man. Meadville and others have done the same, and all the eastern colleges are following this example, and the time is not far distant when the demand of public opinion will be so imperative that old Oxford and Cambridge and the colleges and universities of Continental Europe must and will throw open their venerable halls to the equal rights and privileges of woman.

For one, I am happy that woman is beginning to have an equal chance in the intellectual race of life. It has too long been the public opinion that the highest literary attainments she needed were to read and write love-letters, to calculate the cost of a few pounds of butter or a few yards of calico; to know enough of geography to tell the capital of the State she lived in; to tell who was President of the United States, and to know enough of history to know who it was that discovered America. And it was thought by some that she was amply qualified in art if she could make a wax cross or finish a landscape painting, and finger the piano, and as the climax of all, if she had but a smattering of the French. This they appeared to think was, to her, the *ultima thule,* the utmost limit, to her education. But no, excelsior is as applicable to her as to man. She is being carried forward, *aura popularis,* by the gale of popular favor, and very soon the motto of Oregon will be her motto—*Alis volat propriis*; she flies with her own wings.

Woman should never cease being a student, and she should be a progressive student all through life. Too often is it that having acquired a certain amount of knowledge of manners, of customs and accomplishments, she considers herself made up, as the printers say. She is then like a fine picture placed in a gilded frame and hung upon the wall, simply to tarnish with years. This thing of a finished education is a misnomer and should be expunged from the dialect of an intelligent people. How often have I seen the pale cheek of a lady changed to a beautiful crimson as the county superintendent or examiner has asked the question, "Do you intend to make teaching a life profession?" And how she has choked for an answer. And more than that, what right had he to ask such an embarrassing question? Suppose she turns

Yankee and answers his question by asking one: "Do you intend to be county superintendent for life?" "No, ma'am, not any longer than the people wish me to be, or until I see some better employment or sphere of labor." She replies, "Exactly so with me." If she decides that it is better for her to marry and is determined to control that question herself, whose concern is it? That woman can be, and will be, and is generally as good a teacher with the decision of that question in her own hands as without it, cannot be denied. And more than that, taking things as they are, where is the lady that is not as they say, "in the market"? And she has a right to be. We contend, then, that the question whether she intends to be a teacher for life or not is out of order, but whatever is her relationship she should be a progressive student. If she has the misfortune to marry an ignorant man, so much more is her intelligence needed that she may be the instructor of the household. If she marries an intelligent man, she should be intelligent also, that she may be companionable with him. And if she is to be a mother, for a greater reason than we have yet mentioned should she be intellectual and a thorough scholar, since it is now an admitted fact that the mother generally stamps the intellect of the child. But if she is to be a life-teacher she can only be successful as she is a life-student.

New and more efficient methods of presenting scientific truth are all the while being discovered, and only that person can be successful who is fully and constantly read up with the times, and in no sphere, at no time, and at no age, should the teacher, secular or religious, cease to be a student. We read of a man who spent sixty years in the study of the bee, and he said that he would not then have given it up if the bee had not died. Thus a student she becomes and continues qualified as a successful teacher. For some cause or other, the female teachers have supplanted the male teachers. From the School Report of the State of Pennsylvania we gather the following interesting facts: By looking over the reports from the different counties, we observe that those which are the farthest behind in school appliances, and are the most thinly settled and in the most rural districts of those

counties, there male teachers are the most numerous, but in towns and cities and densely populated districts, and where school facilities are the most numerous and best, there the female teachers predominate. Now, the practical question is, why is this? The common answer is that the wages paid will not justify a young man in teaching while he can secure more for his labor elsewhere. It is a fact that the wages of most educators are unmercifully low, but to say that this is the primary cause which has driven the male teachers out of our schools, we believe to be a harsh criticism upon the judgment and honor of our school boards. Would they, for the sake of a few dollars, allow the interests of the school to suffer? I have a better opinion of them than that. Are not the following some better reasons? Are they not still in our rural districts where male teachers outnumber the female, still clinging to the pagan idea that no one is fit to teach school, especially in the winter, except some gruff old man or beardless boy? anybody but a woman. In our towns and cities, some years ago, they with a good deal of doubt and misgiving, ventured to place a woman in the primary department, and to their utter astonishment she succeeded there; and so she went on until she supplanted nearly all the male teachers in the building except the principal and in some places she is principal. In our cities especially, woman is rapidly becoming educated, and other departments of intellectual pursuit are opening to her. And in the trial she has in the lower departments at least, proven herself to be man's superior as a teacher. These, we think, are the proper causes of the increasing disparity between the number of male and female teachers, and she will yet succeed in the highest departments of teaching, and as soon as public opinion will place her there and sustain her she will succeed.

Thus we see that the general education of our country has passed into the hands of woman, and we do not regard this as an accident of the hour, but a providential arrangement of the age, because woman, educated, is the superior teacher. And first, she has superior natural endowment. Education, strictly speaking, is but the development of what is in us. It is not the bestowment of

any new faculties or powers, but the cultivation and trainnig of them. Among these superior natural endowments of woman may be mentioned, first, her quick and clear discernment of human nature. This principle which cannot be controverted when she is bad, makes her tenfold more ruinous to society than man; and when she is good, why should it not make her correspondingly successful for good? She has better language than man. She is never at a loss in the private circle, at least, to tell what she knows. And if public opinion will allow it, why can she not tell it in public? How many stammering girls or women did you ever see? Few, if any; but stammering boys and men by the dozen. It is a harsh Chinese proverb that says, "A woman's tongue is her sword, and she never lets it rust." This may be used in a good sense as well as in a bad one.

Again, as a teacher, her example is better. There is something restraining, refining, elevating in the very presence of a virtuous, intelligent woman. Such a woman is not as much given to the use of slang phrases or bywords, or provincialisms as man. There is little danger of the pupils ever hearing her use the name of God profanely. There is no danger that the boys will ever see her whiffing a cigar or bespattering the floor with saliva. And lastly, she is more religious. This is shown from the fact that nearly two-thirds of the members of the Christian Church are women. What a Providence there is in this, so that if the education of the young shall fall into the hands of woman, it falls into the hands of the most religious sex. How wise are God's ways.

Teacher, your work is great. Your responsibilities are great. Give the very best possible instruction you can. Do not put off the child by saying, "You are only a child, and that will do for you." Do not do like Bridget did when she was scolded by her mistress for giving the children skimmed milk; she said, "And sure, mum, I would not give the scum to the children; I gave it to the cats." Ah, the children do not want the blue milk, but the cream of your knowledge. Pour out your treasures to them that they may be rich also, and let *nil desperandum* be your motto.

CHAPTER XVI

MASTERING CIRCUMSTANCES

The daisy is said to be the poet's favorite, and next to this I would say is fair youth the rosy morn of life, as every conceivable figure and phrase have been employed to describe this interesting period.

> "Fair laughs the morn, and soft the zephyr blows,
> While proudly riding o'er the azure realm
> In gallant trim the gilded vessel goes;
> Youth on the Prow and Pleasure at the helm."

It is thought to be a time of high hopes, fair promises and bright prospects and is full of joyous anticipations and some may think that youth's ambition needs no additional fire, and that its sails can take no more breeze with safety to the craft.

Such may be the case with some, but it is very far from being the case with many, as thousands of the young today are settling down to a low condition of life, submitting, as they think, to the over-mastery of circumstances, and concluding that henceforth their necessary lot is to browse among the common herd whereas if moved by the spirit of a youth that means to be of note, they might some day be standing by the side of the blooded stock of the stall. My aim then is to point out the way to a higher and better life wherein will be found more happiness and usefulness so necessary in a well ordered life.

A Vicious Ancestry

Many are discouraged because of an ill-favored ancestry. They say of Daniel and others that they were of royal birth and hence their star of destiny must rise. I will not say that his royal and religious parentage, his careful Jewish training during the first twelve years of his life, and his fine personal appearance were of no advantage to him; no, for all these things were decidedly in his favor. How much the virtue or the vice of the parents, the character of the home, the kind of books that they read, the nature of the society in which they mingle, have to do with the destiny of even their unborn children is not well enough understood. The iniquities of the fathers and mothers are visited in more senses than one upon the children.

But my young friends there is nothing like a divine decree or a blind fate about this matter; it is but the result of natural causes and is not absolutely unalterable destiny; if it were so society never could rise.

A vicious ancestry, it is true, is a dead weight against any one, but this weight may be to a large degree overcome by superior virtue in yourself, and in making up the count against yourself be careful to discriminate between vicious and simply humble circumstances. Humble circumstances also may be a disadvantage but they are no disgrace, and as Byron said your mother may have been "born in the garret, in the kitchen bred," yet such a mother may have been the best of mothers. Or as another has said, "I came upstairs into the world for I was born in a cellar."

> "But 'tis better to be lowly born,
> And range with humble livers in content
> Than to be perked up in a glistering grief,
> And wear a golden sorrow."

In this country, perhaps more than in any other, individualism is king and not ancestry, and every character is, to a large extent, independent of previous caste or blood and is "not propped by ancestry whose grace chalks successors their way."

Here the examples are numerous how many may rise up from obscurity and become the leaders in all departments of progress. I do not believe that a poet is born under "a rhyming planet," or that any man is born under any star of unchangeable destiny, neither do I believe in the fatalism of that couplet which teaches that:

> "There's a divinity that shapes our ends,
> Rough hew them how we will."

Shakespeare's theology was always more erratic than his poetry, but I believe him when he says, but with noted exceptions:

> "The fault, dear Brutus, is not in our stars,
> But in ourselves, that we are underlings."

A Fine Personal Appearance

Many are discouraged also because of a lack of fine personal presence, and unlike Daniel they are full of blemishes and are ill-favored. Sydney Smith represented the various persons in society as either circular, triangular, square or oblong, but who can tell which is the most beautiful and the most perfect geometrical figure? Some would choose one and some another, and so personal beauty is a variable quantity, as there is no standard since "every crow thinks her young the whitest."

There are some, who like a note at par, are worth nothing more than their face, but it is a good thing to have "a face like a benediction" as we read of one in Don Quixote, but a well formed face was never a true sign of a strong character. "A handsome man a'nt much of a man anyway," says Billings. It is the strong oak that has the rough bark, and the tender plant that has the velvet down; it is the lion that has the shaggy mane, and the lamb that has the finest wool; it is the Hercules that sleeps on a lion's skin, and the pigmy that sleeps on feathers. Do not sigh, then, to be a chiseled beauty, such a one as is described by Walter Scott, himself a man of rough exterior, when he said:

"And ne'er did Grecian chisel trace
"A Nymph, a Naiad, or a Grace,
Of finer form, or lovelier face."

There are some persons who are like a performance which is all scenery and no speaking, a pantomine, and their life is a kind of a brilliant pantomine, striking but silent, masked but not real, personating some one else but not themselves. And much of the personal beauty of this day is cosmetic, padded, switched and banged and pompadoured beauty, and when all these are taken off, we see that other people are as homely as ourselves.

There is so much of the spurious in society now, and it never was more true than now since it was first written, "Things are not what they seem." Sham and shoddy are striving for the mastery of society, and some are growing faint-hearted and begin to say, "It is of no use, we might as well do as other people do." No, no, that will never do, but be yourself, your noble self, and do not condescend to be an ape. Do not attempt to play the masquerade in life, as the mask may be suddenly torn from you and anyhow you cannot afford to run the risk of the mortification that will follow your exposure; that would certainly be more humiliating than being your humble self all the days of your life.

Assumed worth of any kind, as a rule, is short lived but real worth, be it much or little, lives the longest, is the most useful and gives the most personal and rational contentment.

"Worth makes the man and want of it the fellow
The rest is all but leather or prunello."

Homely People Have Succeeded

And take encouragement from the fact that many persons of defective physique and poor of speech in all departments of life are among the renowned benefactors of our race and are immortal in history.

Moses was not an orator but a man slow of speech and yet worthy to be compared with the Christ of history. In bodily presence Paul was weak and carried about with

him continually a stigma, a thorn in the flesh, and yet where is the human life that is worthy to be compared with his?

Aristotle was a pigmy in body but a giant in intellect. Homer and Milton were blind yet they saw more than most men having two good eyes. Napoleon was a little man, yet he was big enough to be called at least the peer of Wellington. Pope was a hunch-back and an invalid and called an interrogation point, yet he gave to the world precepts as straight as an arrow and as sound as a dollar.

Nelson was little and lame, yet he was strong enough and nimble enough to successfully command one of the grandest navies that ever plowed the seas. It is said of Mirabeau that he was the ugliest Frenchman who ever lived, and his face was like the face of a "tiger pitted with the small pox," and yet his personal presence was attended with such a rare bewitchery of power that seven different women eloped with him. We have inherited from Senaca that grand statement: "I do not distinguish by the eye but by the mind, which is the proper judge of the man." And Isaac Watts once wrote:

"Were I so tall to reach the pole
Or grasp the ocean with my span
I must be measured by my soul,
The mind's the standard of the man."

Only a Few are Models

It is true the Greeks placed beauty next to virtue and made it an object of worship. As a man, what if you are not like the Grecian model, in which Apollo is half a head taller than Venus, or what if your wife is taller than yourself? It may be the best thing in the world for you to look up to her in more senses than one. What if you have not such a beautiful arm as that American girl, who when visiting the studio of Powers, and while pointing to some work of art, the falling mantle exposed the arm, and Powers exclaimed, "Heavens! what an arm! Oh, for the art to petrify it."

What if you are not as attractive as Goethe, who was not only likened to Apollo, but it is said, when ever he would enter a restaurant, the people would lay down their knives and forks to stare at him! What if you, as a woman, are not like Elizabeth of Hungary, the most beautiful woman of her time? What if you are not like the statue that enchants the world, the Venus de Medici, the most perfect existing model of form, or as Shakespeare said of Hamlet, "The glass of fashion and the mould of form"? What if your upper lip does not have such a graceful curve as to form the model of the bow of Cupid? What if your hair is not like the golden locks of Commodus, who when he walked in the sun, they so glittered that the people believed they had been sprinkled with gold dust? What if your neck is not so long and white as to entitle you, like Helen of Troy, to be called the daughter of a swan? What if you are too busy to be often and long in the bath and leave it only to eat and rest in bed, like the Empress Theodora, to increase your plumpness of figure?

It is a known fact that one temperament may be changed for another more than once in a life time and this by proper culture.

But what if you are after all effort doomed to be homely? do you not see that even plain and homely things are the most useful?

Homeliness and Greatness

You may by a correct course of life, compel people to say of you as Rufus Choate said to Chief Justice Shaw, "I know that you are ugly but I feel that you are great."

Socrates had thick lips, lobster-like eyes and a flat nose, was intolerably homely, yet the world says that he was great.

What indeed, if you are as ugly as Ben Johnson, of whose face one writer says: "It looks for all the world like a rotten russet apple, when it is bruised—look at his parboiled face—his face punched full of eylet holes, like the cover of a warming pan."

A homely woman won the heart and hand of Shakespeare.

O'Connell said of Lord Brougham: "He is one of the ugliest beings in existence; it would make a fellow almost sick to look at him. I have seen a head carved on a walking stick handsomer than he is."

Lord Chesterfield, who wrote such a polished work on gentlemanly manners, was a very disagreeable looking man, and George II called him a "dwarf baboon."

Gibbon who wrote such a classic history of the "Decline and fall of the Roman Empire," was a very homely man.

Baron von Humbolt would never sit for his portrait; for he said: "Dame Nature would have too good a laugh at my expense, and to punish her for the shabby trick she played on me, I will never give her that pleasure."

The accomplished Lady Hamilton gave her heart to the dwarfish, homely, sickly looking Lord Nelson, and she loved him still after he had lost an eye and an arm. She loved the soul of the great naval hero.

The popular preacher, George Whitfield, had eyeballs so crooked and squinting as to render him disagreeable to look at, and so of Edward Irving. Erasmus Darwin was vast and beefy looking, clumsy, lame, ugly and a stutterer, yet he won the hand, in the face of many rivals, of one of the finest ladies of his time. John Wilkes is said to have been the ugliest man in England, and a man once offered him ten guineas if he would not pass his office window for fear of bringing ill luck on his house, yet he had such a captivating manner about him that many of the finest women of his time were ready to follow him anywhere. He once said to Lord Townshend, said to be the handsomest man in England, that if he would give him but half an hour start, he would enter the list against him with any woman he might name.

The Storm in Your Face

Don't think everything that seems to be against you is really against your success. You may be on the wrong path and nothing but a storm in your face will drive you from it and afterwards you will be thankful for the storm.

What you call adversity may be a great blessing in disguise.

A man once asked Lord Thurlow, the Chancellor of England, as to the best means for his son to succeed at the bar. He said: "Let your son spend his own fortune, marry and spend his wife's fortune and then go to the bar; there will be little fear of his failure."

As a rule a self-made fortune is the only one that is appreciated and hence the only one that is likely to remain with us. An eminent musician once said, when he heard a young lady sing: "She sings well, but she wants something and in that something everything. If I were single I would court her, I would marry her, I would maltreat her, I would break her heart, and in six months she would be the greatest singer in Europe." This sounds very severe, but it is certainly true, that what sometimes seems to break our hearts, like losses and crosses seems necessary to bring out the highest and sweetest strains in our being.

It is often the case that children wish to begin where their parents left off, but often in trying to do so, they leave off where their parents began, and while I am not disposed to make a virtue of poverty, I am not disposed to make a virtue of wealth.

The blessing as a rule is not in either, but in the man, in the kind of stuff of which he is made, or which he developes.

A wise man uses the tossings of adversity, much as a springboard, by which he may be vaulted into success and victory. It is said that about ninety per cent of those who start in business fail, but the most of these failures are with those who are trying to make their beginning about the middle of the ladder, and comparatively few failures are found with those who started from the ground floor.

It is said of Michael Angelo that when in the midst of his most important work, he slept with his clothes on, so that at night if some good thought would come to him, he would spring up at once and with the candle fastened on the top of his pasteboard cap, he would proceed to put in some new shading in his paintings. And when we look now at that wonderful painting, "The Last Supper,"

the masterpiece of Titian, little do we think of the seven years of almost daily and patient toil which it cost the artist.

Patient and anxious toil, even while others may be taking sweet rest, may be the needed school of training for our greatest success.

Fortune visits every person at least once in his life, but when she finds we are not ready to receive her, she she goes in at the door and out through the window, and some think Fortune has blasted them from their birth and give up all hope of success.

But be a man of courage, one

> "Who breaks his birth's invidious bar
> And grasps the skirts of happy chance
> And breasts the blows of circumstance
> And grapples with his evil star."

Succeed as Early as Possible

Dryden read Polybius before he was ten years old. Pope wrote excellent verse at fourteen. Pascal, the famous French mathematician, composed at sixteen a pamphlet on conic sections. Lord Bacon at sixteen had successfully pointed out the errors of the Aristotelian philosophy. Gibbon was a young man when he completed that great work, "The Decline and Fall of the Roman Empire."

Alexander was only twenty-seven when he had conquered all of Western Asia.

Pitt was prime minister of England when 24. Alexander Hamilton was secretary of the treasury when 32.

It may be seen then that this is not specially the age of young men. They are exceptional cases we admit, and the great controlling men in most ages have been men of mature years.

The famous Chinese Gordon was a little over 30 when he assumed command of the British army in China. Sheridan was less than 30 when he triumphantly swept up the Shenandoah Valley. General Grant said that McKenzie at 21 was the finest Colonel division commander

in the Union Army. Napoleon was only 27 when he won that famous victory at Lodi.

What we design to teach and inspire is that such are the superior advantages now that a young man should be great at an earlier period than ever before. It is true that the necessary equipment is of such a broader and deeper nature that it may require more time. But as in the mechanical world with such improved facilities so much more can be accomplished and in less time, so it is with all the helps in the literary and scientific world, so much more should be accomplished early in life. But be careful of crowding out age and experience for thereby you may be not only ungrateful but may destroy better foundations that you can lay in many years to come.

True Greatness and Goodness

In the strictest sense the good alone are great. Why can you not be good as well as great while young? But perhaps some one will say, when then shall we sow our "wild oats"? Now, wild oats are not thorns, nor briers, nor cockle, they are simply oats, wild it is true, but in the main harmless if not useful, but if it means a sowing that shall have a bad reaping, then sow sparingly, for as ye sow, so shall ye reap. Be careful of the maxim of having a good time while you are young, for that may give you a bad time when you are old.

And let me say have a fixed determination to live as long as you can, as there can be no virtue in suicide, whether it be by a sudden blow or by a prolonged process. Many persons when nearing the close of life find occasion to lament that they did not take better care of themselves in their earlier years.

If your physical strength is your capital on which you expect to do the business of your life, see to it that you do not reduce that capital by profligate habits, by intemperance in eating and drinking and sleeping which so rapidly vitiate and exhaust the vital forces.

How often is it the case that men endowed with a large stock of vital force, even a Hercules in strength, yet they are most reckless in their habits. They say nothing hurts them. They may be almost equal to the twelve tasks of

Hercules; be able to slay serpents and lions and even bring the girdle of the queen of the Amazons and yet like him a little tinge of poison may cause their death.

O, young man, take care of that body; it is the temple of the living God and he that defiles the temple, him will God destroy.

And if your mind is your capital, it is still important to take care of your body, for it is very difficult for a mind to work well tormented in a diseased body.

Do not fail to cultivate a cheerful spirit and labor hard to banish the demon, melancholy. I have observed, as no doubt you have, that most persons who have attained to a remarkable longevity have been persons of cheerful disposition, and properly considered enjoyment is not only the end of life, but is an important condition whereby we may attain a protracted term of existence.

The happier the human being is, the longer he lives; the more he suffers, the sooner he dies. To add to enjoyment therefore, is to lengthen life; to inflict pain is to shorten life.

Your life is needed in the world or you would not have been here, and you are needed in the field of labor as long as possible, at least until Providence shall call you from labor to reward, hence suicide in both human and divine law is pronounced a great crime.

I do not forget that saying of Young which is, "That life is long which answers life's great end," but the end of life is to live happily and usefully and as long as you can.

We should not strive to live long simply to add years to years but to add deeds to deeds.

"We live in deeds, not years; in thoughts, not breaths;
In feelings, not in figures on a dial."
"We should count time by heart throbs.
He most lives, who thinks most, feels the noblest, acts the best."

There are so many who simply breathe and do not live; they take in everything and give out nothing; they have life but no soul.

I think Walter Scott was right when he said:

"One crowded hour of glorious life
Is worth an age without a name."

But why not have all the hours of a long life like these? Our own American poet, who has passed from us, beloved and honored by the whole world of letters, and who was permitted to live so long and so beautifully, Longfellow, once wrote: "Alas! it is not till time with reckless hand, has torn out half the leaves from the Book of Human life to light the fires of passion with from day to day, that man begins to see that the leaves which remain are few in number." Yes, often about one-third of life is spent before we come to a right sense of life.

Man's Life Should Be Longest

Man is the noblest work of God and should live the longest of all living things.

The age of the cypress, boabab, chestnut, oak and palm is almost fabulous. The age of trees is variously determined. By scars, as in the spruce; by counting the rings on the bark from the base to the top of the stem, as in the Brazillian cocoa-nut, which shows its age to be from 600 to 700 years; by counting the concentric rings, as in the oak, which show some trees in England to be 300 to 400 years old. The Wallace oak at Ellersley, is believed to be more than 700 years old. The celebrated eight olives on the Mount of Olives, are known by authentic documents to be nearly 800 years old. The yew tree of England, and the sweet chestnut of Sicily, and the big trees of California are of a similar age, while one explorer computed the age of a boabab tree of Africa at 5,000 years, and some calculate some of the cypress trees of Mexico as being much older. Humbolt speaks of the trees of Teneriffe as one of the oldest inhabitants of the earth.

The life of the insect is of short duration, ranging from a few hours to a few weeks. A toad lives about fifteen years and a tortoise in London died at the age of 120 years and then by accident.

The fish live long. Buffon speaks of some carp in a certain pond known to be over 150 years old. A pike was once caught and by a brass ring attached, it was found to be 267 years old.

Of birds the chicken family live about 12 to 15 years. The paroquet 120 years. The goose lives longer than the chicken, and the swan is known to live 120 years. The stork lives over 100 years. There is a fable that the raven lives 1,000 years.

The age of domesticated animals has been placed as follows:

The camel 40 years, horse 30, ox 20, dog 12, cat 10, sheep 9, rabbit 8, guinea pig 7. The elephant lives from 200 to 300 years, the whale 400 years.

The Bible account of early man as to longevity is open to a double interpretation and hence the question may be considered as yet an open one; but when it is said that Abraham lived 175 years and others of his time a little below that age, we can find similar cases in late years. A Hungarian died at the age 185, an Englishman at 169. Age should correspond to the time of growth; that is, it should be five times that of growth.

Two Englishmen, Thomas Parr and Henry Jenkins, were at death 152 and 169 respectively. Patrick O'Neil, called the Irish Bluebeard, buried seven wives before he finally died at 120. The French have paid much attention to vital statistics. They mention a lady who was married at 127, but died the next year. They mention also a doctor who married at 116 and became the father of two children, but he died in four years. They also record about a Norwegian peasant who died at 160, leaving two sons to mourn his death, one who was 108 and the other only nine years old.

Why Do We Die?

If the repair were always identical with the waste, life would then only be terminated by accident, never by old age. This is a fact well known to all who have investigated the subject. In early years this balance of the human system is admirably preserved. As man advances in life, however, and gets up to fifty or sixty he begins to

get stiff in the joints and experiences what he calls feeling his age. Renovation of various organs of the body depends on the blood, and if this supply is not at all times furnished in sufficient quantity and quality, a gradual deterioration takes place. Heart and arteries become clogged and the whole delicate machinery suffers from the lack of nourishment. Deposits of phosphate and carbonate of lime accumulate and the change is really a chemical one, by which the blood is hindered from going from the extremities of the system and fulfilling its work of repair and renovation. Old age, then is the result of a change in the blood, which becomes overloaded with earthy salts, leaves its refuse matter in the system, and the valves of the heart become cartilaginous. Becoming thus, the heart is not able to propel the blood to its destination. Arteries also having become ossified, a still further obstruction takes place and the whole body languishes. Blood is life. Now if some means were discovered by which the blood could be kept in condition like that of youth, it would throw off its earthy salts which obstruct the action of the heart and arteries. Our food and drink make our blood. It seems, then, that it is to them we should look primarily for the quality of it.

Without eating and drinking there is no life, but we may select certain kinds of foods containing a minimum amount of the elements which cause the ossific blockages in the system. An English physician, Dr. C. F. De Lacy Evans, who made many researches in regard to our food, comes to the conclusion that more fruit should be eaten, especially apples, grapes and bananas, they being rich in nutritious elements. Being deficient in nitrogen, they are best for elderly people, as they keep the blood in better condition than flesh. At the age of 60 people should eat less beef and mutton and use more apples and nuts of all kinds, the latter being rich in many of the nutritious elements of meat. Fish and poultry have not the objectionable earth salts of beef. In order to retard physical decay and to keep the blood in a wholesome condition, distilled water is recommended. It has solvent qualities which act upon the earth salts in the blood and expel them from the body. A goblet of this water taken three times

a day, with ten or fifteen drops of diluted phosphoric acid in each glass has a tendency to assist the blood in eliminating the obstructing salts. A man is as old as his arteries. If they are soft and compressible, the deteriorating effects of old age have not appeared.

Flourens, in his work on Human Longevity, cites the case of the Italian centenarian, Cornaro, whose recipe for health and long life was extreme moderation in all things. Flourens himself insists that a century is the normal life, but that 50 years beyond, and even 200 years, are human possibilities under advantageous conditions. Hufeland also believed in 200 years as an extreme limit. Sir James Crichton Browne, M. D., concedes, in a late address, that Flourens is right. Duration of growth gives the length of life. Hufeland held that the human body grows till the age of twenty-five, and that eight times the growth period was the utmost limit of man. But if twenty years be taken as the time of growth, even five times that will give us a century. According to Flourens and Cuvier, man is of the frugivorous or fruit and nut-eating class of animals, like the gorillas and other apes and monkeys. Man has not teeth like the lions and carnivorous beasts, neither has he teeth like the cow and herbivorous animals. Intestines in the man are seven or eight times the length of the body; the lions are but three times the length of its body. Herbivorous animals, like the cow, have intestines forty-eight times the length of the body.

So, judging man by his teeth, his stomach and his intestines, he is naturally and primitively frugivorous, and was not intended to eat flesh. Fruit is aperient, and apples act on the liver and are good brain food also, as they contain much phosphoric acid. As to the effect of certain climates, perhaps too much stress has been laid upon that. We find that Thomas Parr, who lived in England, died in his 153rd year, and was dissected by the celebrated discoverer of the circulation of the blood, Dr. William Harvey (who expressed no doubt of his age), was never out of his native country. More depends on food than on any climate. Exercise, fresh air to live in and to sleep in, daily bathing and freedom from medicine are the important things. In July, 1893, the Courier-Journal of

Louisville published a long account of James McMillen, who died in Carlisle County, Ky., at one hundred and seventeen years of age. When Buffon, Hufeland, Flourens and men of that class, who have studied the subject, believed in the possibility of 150 or 200 years of life, the subject is not to be laughed at.

Think Out a Plan of Life

Begin early in life to think about what you intend doing and determine as soon as you can what shall be your occupation or profession. Life is short and many spend much of it before they find out that for which they were intended. Any honorable calling is honored by a life of devotion to it, and most callings need a whole life time, but those who are "long choosing and beginning late" cannot make that success they otherwise might have done. I do not ask you to choose this or that, but I do ask you to choose that for which you believe yourself best adapted or called, as no man can work well in another man's harness.

David with Goliath's armor would have been weaker than with his own sling. As Sydney Smith said: "Be what nature intended you for, and you will succeed; be anything else and you will be ten thousand times worse than nothing." Then I say early get into your niche and stand in it and do not despise it and no man need hang his head who is engaged in an honorable calling, however humble.

A hard hand and a dusty face with a good conscience are better than a velvet hand and a powdered face with a bad heart. But never accept of a low and degraded and wicked calling because there is money in it. The business will most likely ruin you, then what will your money be worth to you. Better is a penny with honor than millions with disgrace. Think not that you can pursue your calling or business if the influences about you are evil and you escape the contagion, as the infectious atmosphere of that wicked business will poison your moral character as surely as malaria will corrupt your blood.

Then my young friend in some honorable calling early

put all your powers to work. The world wants young, fresh, rich blood. The old are soon, too soon, to be cast aside.

"Years steal
Fire from the mind as vigor from the limb;
And life's enchanted cup but sparkles near the brim."

How much parents can do in a quiet way to assist their children in finding their proper places in life, but any arbitrary choice on the part of parents may not be well unless they are clearly convinced of strongly marked inclinations or adaptations for certain kinds of labor or professions.

The old plan of the father, if it ever were so, instead of the Lord, selecting the preacher from among his boys and sending him to school and sending the other boys to the field or the shop was a very questionable course. The better way would be to discuss the various callings and professions in their hearing, call out their opinions and carefully note their views and their early leanings for one calling over any other, and in most cases they may be fitted in some honorable calling.

But these indications for certain callings will not always be so clear and unmistakable and in these cases a man may do about as well in one as in another. But doubtless many of the wrecks in society may be traced to the fact that men are trying to do that for which neither nature nor grace has qualified them. Some are trying to be preachers of the Gospel when they ought to be working at a puddling furnace; some are trying to be teachers who ought to be pupils, and on the other hand some are blowing the blast who ought to be blowing the gospel trumpet; and some are sowing the grain who ought to be sowing the seed of divine truth, and when they find out their mistake perhaps it is too late to change.

My friends, we go through life only once, and we cannot go back like surveyors and change our stakes and correct our field notes, but we permanently drive our stakes as we go, and we put down our field notes in indelible ink, and hence I come round to the point again how important that we be right at the start.

A Word to Ladies

May I be permitted to speak a word to young ladies, and first let me speak of the importance of attention to domestic duties. You are to become, by and by, the queen of some home. And upon you will depend very largely the success or the failure, the happiness or the misery of that home. The model young lady practically learns all the duties of the home in every department of that home from the laundry to the parlor, from the cellar to the attic, from the baking of a loaf of bread to the fingering of a piano, from the darning of a stocking to the trimming of a bonnet, from the training of children in the nursery to the entertaining of the guests in the drawing room, in a word, she strives to learn everything that belongs to a well regulated family.

But we must express our fears that in these times this part, this important part, of a young lady's training is too much neglected. Her youthful years are otherwise occupied.

> What is your sex's earliest, latest care,
> Your heart's supreme ambition? To be fair.

There may be a great deal of solemn prose in the question, what would you do with a home if you had one? But whether it shall be a happy or an unhappy home will depend very much on how well you are prepared to take charge of it. Swift uttered a solemn truth when he said, "The reason why so few marriages are happy is because young ladies spend their time in making nets, not in making cages."

You have a right to expect that your husband shall make a living for you, but you must make a home; and this you can do without being his slave. I have no words of sympathy for a cross, cruel, petulant, fault-finding sour companion, husband or wife, but as I am speaking of the latter, see that you shall do your part in tidiness, in economy, in order, which will induce your companion to say like the Italian proverb, "Home, my own home, tiny though thou be, to me thou seemest an abbey."

I must now speak of the importance of mental culture. The model young lady will not neglect her education.

In the midst of such ample facilities and wonderful encouragements there seems to be no excuse for this neglect in this day.

Samuel Johnson in his day spoke of "wretched unidead girls." But he was somewhat impartial as he also spoke of a young man who "seemed to possess but one idea and that a wrong one." But he was especially severe on woman appearing in public life as a preacher, when he said, "Sirs, a woman preaching is like a dog's walking on his hind legs. It is not done well; but you are surprised to find it done at all."

We are not surprised to find woman a public teacher and in many departments she has proven herself to be the most successful teacher.

For many years they tried to keep her out of the medical profession, but she has come in; for many years they tried to keep her out of the legal profession, but she has come in; and for many years they tried to keep her out of journalism, but she has come in, and in all these places she has come to stay. But my young friend, what will you be intellectually? It is said of Elizabeth Fry that personally she was very attractive, and in early womanhood she had a severe struggle in deciding whether to be a gay belle of fashion or to devote herself to a life of usefulness. She chose the latter and in a grand life of philanthropy she visited the prisons and asylums of England, France, Holland, Germany, Denmark and Prussia.

What will you decide to be? A belle of fashion simply to win the favors and smiles of the gay or one devoted to the high and noble purposes of life, filling your sphere with deeds of kindness and words of love. At least the ground-work of your intellectual life must be laid while you are young, and before you are called to the cares and duties of a home. Do not spend all these bright and sparkling years of youth with fuss and feathers, with flowers and flounces, with fun and frolic. It is said of Madame de Stael that she was deep in the philosophy of politics at an age when most other girls were engaged in dressing dolls.

And although the most of you may never appear in public life, yet you are to be the private instructors of the

coming generation, and this instruction may be confined to the sacred precincts of your home, but there by your own fireside is to be laid, to a large extent, the foundation of our national prosperity or our national ruin. The sweet lullabies which you may sing by the cradle's side may be the nation's sad requiem or its triumphal march onward to higher national glory.

A long time ago some one said that if permitted to make the ballads he should not care who made the laws of a nation. O young ladies see what is your supreme power and use it for the right.

And now you would most certainly think I had not done my duty to this subject if I did not speak with more especial emphasis about your moral culture. I have not left this point for the last because I think it least, very far from that. But of that you have heard more often perhaps than of either the other points.

Adam Clark said one woman was equal to seven men and a half. If there is any sense in which this is true, it is when one woman is bad. She can pull more angels down than were the number of the stars swept down from the skies by the great red dragon of the Apocalypse. Ay, more, she did pull a whole bright and pure world from its moral orbit down into the darkness of the valley of sin.

> "What mighty ills have not been done by woman?
> Who was't betrayed the Capitol? A woman!
> Who lost Mark Anthony the world? A woman!
> Who was the cause of a long ten year's war,
> And laid at last old Troy in ashes? A woman!"

I will not quote the next line, it is too strong and yet too true. O how can this mighty power for evil be turned into a safe channel for good? Sometimes it has been held up as a reproach to Christianity that it commenced with a company of women and that they largely outnumber the males in the church of to-day.

If this is so and shall continue to be so it will be an infallible prophecy of the ultimate triumph of Christianity throughout the world. For let Christian mothers have the training of childhood and we will have in time a Chris-

tian manhood for "the child is father of the man"; or, as Milton said, "The childhood shows the man as morning shows the day."

My young lady friends, Christianity has been your most beneficent friend, and may you never forget this friend and turn away from him with indifference? I trust you will never be so ungrateful. How many joys are yet held out for your possession? How many rich fields invite your toil and how bright may be the crown of your rejoicing?

A Happy Marriage

Now having selected your calling and having made whatever preparation is necessary or what you can for entering upon it the next important step is to select a help-meet for you. Man was never intended to fight life's battles single handed; neither was it the purpose that he should share life's joys and sorrows alone.

> How dreary would life's voyage be to him if he should be:
> "Alone, alone, all, all alone,
> Alone on a wide, wide sea."

Marriage is man's normal state and the Creator knew what was best for man. A few persons single-handed have won their way to success in life, but they have been few and they will not furnish you a rule. Some of them also have been contented and happy in single life, but they have been few, while most of them have been unambitious, shriveled, penurious, cross and sour.

> But earthlier happy is the rose distilled,
> Than that which withering on the virgin thorn
> Grows, lives and dies in single-blessedness.

My advice is that of Franklin's, namely, to enter this important relation at the earliest moment your age, occupation and circumstances will justify. Many young persons save little or nothing while single, as there is no special object to induce them to habits of economy and they are the constant prey of the lazy leeches of society who

live on the blood of others. And of all things that a noble young man cannot endure it is to be called stingy or mean; his bottom dollar will go before he will stand that. And hence before he is aware of it he has become a spendthrift; and once having become so it is almost impossible while he is single to get back to economy again. And when he enters the marriage state he is cut off from that company of leeches and he finds it much easier now to support two than to keep a dozen who formerly lived off of him. And if your marriage has been a suitable one your home will be a constant reminder of the need of economy, as well as a center of attraction away from the haunts of vice and an inspiration to industry and a comfort to you in the hardships and trials of life.

I believe it was Cowper who said:

> Choose not alone a proper mate
> But proper time to marry.

Start also with this conviction of your responsibility to God. This, said Daniel Webster was his greatest thought, that of his accountability to God.

> Life's but a means unto an end, that end,
> Beginning, mean, and end to all things—God.

This will not make your real pleasure less but more and also more abiding.

I have intended to say all through these conversations that I wish you to be happy, yes truly happy, and your happiness will be the purest and best when tempered with the conviction of your future accountability. "Rejoice, O young man in thy youth, and let thy heart cheer thee in the days of thy youth, but know thou that for all these things God will bring thee into judgment." This will serve as a restraint to inordinate pleasure or gratification and all persons need restraint. To hold in check the impetuous torrent of passion there is no force equal to this conviction that there is a future and impartial tribunal at whose bar each must give account of himself to God.

This conviction also will lead to practical religion wherever it properly seizes the mind and heart, for I can-

not see how any man can take in fully the thought of God and his relation to him and still neglect those duties growing out of that relation. Hence, I say, incorporate religion with the other duties of your early life, and as I have said, in order to succeed in other pursuits you must begin early, so in order to succeed in religious matters begin early.

It is in your own interest that it is enjoined upon you to "Remember now thy Creator in the days of thy youth, before the evil days come and the years draw nigh when thou shalt say I have no pleasure in them."

Again I would say, cultivate a high regard for all religious matters and never tolerate a light and frivolous spirit concerning them, for as sure as this grows upon you it will culminate in open hate and disgust. And in order to get this religious culture find a home in some church, for it is hard to raise fruit on the public commons, for while out of the church there is no fence about you; you are exposed to every vandal and Satan has a kind of public license to roam over all outside territory at will, and woe be to the stragglers that fall a prey to his cruel power.

Dr. Samuel Johnson was very wise when he said:

"To be of no church is dangerous. Religion of which the rewards are distant, and which is animated only by Faith and Hope, will glide by degrees out of the mind, unless it be invigorated and impressed by stated calls to worship."

Do Not Be a Floater

You must early learn to help yourself. I would not encourage that kind of independence which at last ends in selfishness, but that kind of self-reliance which enables one to walk alone without clinging to your mother's apron strings. Too many are to-day waiting for inherited fortunes, but such fortunes will seldom suit the heir any better than the father's clothes will fit the son, and the truth is to insure a good fit, you must have your fortune made to your own order. Some are thinking that they are having a hard time now, but just wait till such and such a friend or relative dies and then they will float well in society. A man may learn to float by tying onto his body

corks and bladders, but the best way to learn to swim is to plunge in and struggle with and conquer the floods.

The men, as a rule who make the best use of wealth are those who have really and truly earned it. It is said of the lobster, if by a chance billow it is left high and dry on a rock, he will not make even the smallest effort to regain his native element, and so there are men to-day so inert and lazy that they make but little personal effort to succeed; they are waiting for some generous billow of fortune to set them afloat.

In some countries the natives carry the travelers on their backs over the mountain steeps. And so to-day many parents are carrying their children, and when the time comes that they must put them down, they will not be able to take care of themselves, never having been trained to walk life's rugged way alone.

There are two methods of training children, and one is all "you may," allowing the child to do everything it wishes to, to follow every whim and notion of its own. No wonder such a child is a spoiled child. Such a boy or girl grows up to become simply a big baby, not a real man or woman.

The other method is all "don'ts," that is, they are never allowed to do anything scarcely, they are never put upon their honor, they are never trusted. Is it any wonder, then, that as soon as from under the eye of the parent, they will take unwarranted liberty? Suppose the parent is about leaving home, and she says, "Now, Johnnie, don't go near the well." Of course he will go to the well then, because he thinks there is something in it to be seen.

"Now, Johnnie, don't go to the barn among the horses." Johnnie will go now, of course. He just thinks he hasn't seen the colts for two or three days, and I should not wonder if he would try to ride one of them before the mother gets back. "Now, Johnnie, don't get at the mince pies in the pantry, and if Johnnie doesn't get a piece of mince pie before his mother gets back it is simply because he don't like mince pies, that is all.

Too many "don'ts" never make a good child. Teach a child to rely on its own sense of honor and right and you should try to cultivate and guide that sense aright.

But my young friends, you who are growing into manhood and womanhood, early learn to mainly depend on your own energies. Do not expect to live on other people's brains, for when you come to borrow, you will find that most other people are much like yourself, they have none to loan.

Do not wait for dead men's shoes, or you may go barefooted all the days of your life. Do not always carry water from your neighbor's well; dig a well of your own. Do not always be lighting your torch at other people's fires; build a fire of your own.

Do not be a boarder all your life time; build a house and marry a wife and live under the shadow of your own roof, a self-reliant, joyous and happy man.

My young friends I cannot close this book without saying that whatever may have been its influence upon your life I can assure you that it has intensified my desire for your highest welfare here and hereafter. But may I not hope that it will influence your lives for good throughout the years to come causing you to aspire to the good, the true and the lovely, and to trample beneath your feet the mean, the low, the base and ever aiming at the noblest and grandest possibilities within your power may the richest blessings of heaven crown your happy life.

He liveth long who liveth well,
All other life is short and vain;
He liveth longest who can tell
Of living most for heavenly gain.

He liveth long who liveth well,
All else is being flung away;
He liveth longest who can tell
Of true things truly done each day.